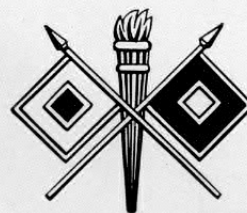


A HISTORY OF FORT MONMOUTH, N. J. 1917-1946 - U. S. ARMY SIGNAL CORPS

*A
History
of
Fort Monmouth
New Jersey
1917-1946*



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PART I
THE LORE OF MONMOUTH COUNTY
1776 - 1917

The shrill cry of the air raid siren reverberates across the field and in a few seconds fighters are airborne. Unerringly they intercept the enemy bombers.

The target is shrouded in fog but, undeterred, our bombardiers drop their lethal load on an invisible pin-point with uncanny accuracy.

The apparent chaos of an amphibious operation is controlled by a commanding hand from the fleet flagship. Tanks are guided amid the confusion of battle. Isolated infantrymen maintain unbroken contact with their command post.

None of these operations could have been possible without the electronic twins, radar and radio. Without them we might well have lost World War II. Unrestricted aerial warfare and the vast complexities of modern mechanized battle gave the advantage unflinchingly to those forces prepared to function on a high technological basis.

Electronics is primarily the responsibility of the Army Signal Corps. For years the hub of technical development and training in the Corps has been Fort Monmouth. Its laboratories designed the equipment; its schools trained the technicians so vital to military operations. Without adequate battle and logistical communications we could not have fought and won a global war.

The locale of the largest Signal Corps training and developmental installations for more than a quarter of a century, Monmouth County is rich in historical tradition. Henry Hudson's "Half Moon" sailed into broad Navesink lagoon in 1609, sent a reconnaissance party ashore. On the flat Jersey meadows the Dutch and the English disputed control of the Delaware River Valley; Sir Edmund Ployden made abortive colonization attempts in "New Albion"; and Berkeley and Carteret finally established the Jersey colony after the British had seized control of the entire Atlantic seaboard in 1664.

By 1750 Jersey was relatively clear of Indians and was thinly populated with farms and small agricultural villages. Bold in their dislike of the British restrictions, the Jerseyites became closely associated with the Revolutionary insurgents. Most famous of the military activities in the state was the Battle of Monmouth, which took place on 28 June 1778. In this last large scale engagement before Yorktown, the British, under Clinton, were attacked by Washington at Monmouth Courthouse, now the township of Freehold and but a few miles from Fort Monmouth. General Clinton had evacuated Philadelphia, crossed the Delaware with a wagon train of loot, and was en route to New York when the American force moved up from Valley

Forge. Anxious to strike the British, bolster the honor of the young republic and enhance his personal prestige, Washington determined to engage the enemy at the earliest opportunity.

The Battle of Monmouth is noted principally for the activities of General Charles Lee and the brave Molly Pitcher. Lee was seemingly derelict in the handling of his force, which had been sent to make the initial contact with the British. Tactical failure caused the Americans to be driven back in some disorder by Cornwallis, and Lee not only made no effort to rally his men but did not warn Washington of the situation. Heroic work by the divisions of Wayne, Greene, and Lord Stirling saved the day for the Revolutionary forces. Fiercely oppressive heat forced cessation of the engagement at dusk and the British slipped away during the night, reaching the shelter of the guns of the fleet at Sandy Hook, from where they were evacuated to New York. Each commander claimed the final victory, but the British were never again able to place an effective army in the field.

The same engagement produced an almost legendary character who has contributed greatly to the historical lore of the county. The only battle heroine of American history, Molly Pitcher's name is synonymous with womanly courage and valor. Born Mary Ludwig, of Germanic stock, she acquired her pseudonym while carrying water for the gunners of Greene's artillery during the battle. The enervating heat was sapping the energy of all the troops and was particularly telling on the artillerymen. Molly's husband, a cannoneer, was hit while tending his gun, just as she approached with a bucket of water. Seeing this, Molly immediately stepped in and filled her husband's place, firing several rounds before a replacement arrived. General Washington had seen the incident and highly commended Molly on her bravery, granting her an honorary commission as brevet sergeant. Following the war, Molly returned to her home in Pennsylvania, where her husband soon died and she remarried. The state legislature of Pennsylvania granted her an annuity of \$40 in 1822 in appreciation of her services to the country. Her later life was a sordid struggle for existence, but upon her death in 1832 she was buried with full military honors.

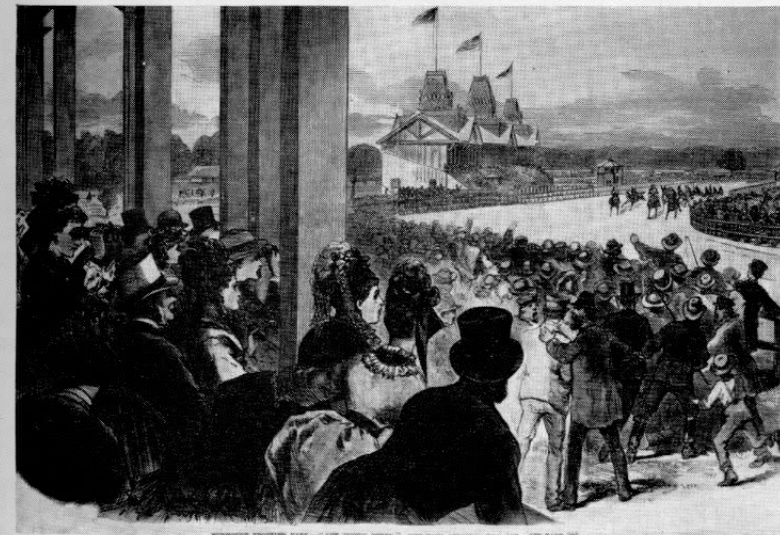
After the Revolution and during the early years of the new Republic, the country in and around the future site of Fort Monmouth enjoyed a quiet existence. The north shore of Jersey was popular in the first half of the Nineteenth Century as a seaside resort area. Oceanport, the borough nearest the Fort, was functioning before 1820 as the terminus of coastwise steamship lines. A vigorous trade plied between New York and Monmouth County. Known as Peggy's Point or Eatontown Dock, Oceanport was the storage and shipping point for the immediately adjacent territory in central Jersey. Other wharves were built at Red Bank, where the Navesink River was readily navigable.

Jersey State militiamen used the area as a training ground during the Civil War. However, these activities were short lived and no formal military establishment was installed at that time.

The gaudiest period in the history of the county closely followed the Civil War. Monmouth Park Rack Track, built in 1870 on the future



Monmouth Park Grandstand—"The Gay 90's"



Finish of the "Jersey Derby"; Later to Become the "Kentucky Derby."

site of Fort Monmouth, was the most noted racing plant in the United States during the 23 years of its existence. Within ready commuting distance of New York and near Long Branch, foremost seaside resort in America by the middle 60's, the track was the mecca of the leading political, theatrical, and social figures of the country. John F. Chamberlin conceived the idea of a racing establishment while on a fox hunt in the vicinity in 1865. An association was eventually formed that included such personages as August Belmont, the banker, Pierre Lorrillard, the tobacco magnate, and David Withers, well known in racing circles.

For years the track was frequented by "Jubilee Jim" Fisk, Lily Langtry, Lillian Russell, "Diamond Jim" Brady, "Boss" Tweed, notorious Tammanyite, R. W. Cameron, Dr. Robert Underwood, Ulysses S. Grant, and many another who was famous in the annals of the times. Two "floating palaces," the last word in contemporary magnificence, made the daily run from Pier 28 in New York to Sandy Hook. Rail service connected the boat terminus with the track.

Money changed hands freely at Monmouth. Huge bets were made, and riotous parties given in near-by resorts. On opening day, with 6,000 persons attending, the then unheard of total of \$31,000 in purses was posted.

Salvatore, most famous horse to race at Monmouth Park, ran a mile in 1 minute, 35 and 1/5th seconds in 1890. This record stood for 27 years.

The glamorous career of Monmouth Park reached its high point in 1890 when a new track and grandstand were constructed. Somewhat north of the earlier plant, the entrance was where the Main Gate to Fort Monmouth now stands on the Oceanport-Little Silver road. The steel stand was the world's largest, with a seating capacity of 10,000, and the extended roof could shelter a similar number of standing spectators. The new track encompassed 640 acres, almost treble the size of the old park. Simultaneously, the New Monmouth Park Hotel was built. This was the zenith of Victorian opulence with a surfeit of gold braid, silk tapestries, glass chandeliers, oriental rugs, and baroque staircases. It was dedicated with the new course on 4 July 1890, the twentieth anniversary of Monmouth Park. Soon after, Lillian Russell created a sensation by riding to the track on a diamond studded bicycle, a gift of Jim Brady.

In 1893 the New Jersey legislature banned horse racing in the state, dooming both the track and the flush prosperity of Long Branch. The "Jersey Derby," prime stake of the season, was moved to Louisville, where it eventually became the famous "Kentucky Derby."

Deserted, the grandstand and hotel were left to ruin and desolation. Weeds grew on the infield. Rust began to gnaw at the steel pillars. Boards were torn loose by the wind and hung at a crazy angle. Quiet again returned to the Monmouth marshes. It would remain unbroken until the Army Signal Corps established a wartime training camp at Little Silver in 1917.

Part II

GENESIS AT LITTLE SILVER

1917 - 1925

PART II

GENESIS AT LITTLE SILVER

1917 - 1925

1. Establishment of Camp Little Silver

Drawn irresistibly into the maelstrom, the United States entered the World War early in 1917. Technological advances had radically changed previous concepts of battle. Fighting in the air, beneath the sea, and in iron vehicles on land was to cast death in a new and terribly more efficient role.

Among the foremost requirements in the new warfare were vastly expanded communications facilities. Developed in the American armies since the Civil War, this work was performed by the Signal Corps. Upon our entry into hostilities the Corps had a total strength of 55 officers, 2530 enlisted men. Since this force was obviously inadequate to perform the wartime duties of signal operations, rapid expansion in training facilities was recommended by the then Chief Signal Officer, Brigadier General George O. Squier. New camps were planned in California, Texas, Kansas, and at a site near New York. Federal land grants were available for the first three installations; it was necessary to lease land for the New Jersey establishment.

John Flock, mayor of Long Branch, urged the War Department to acquire acreage in the Port-au-Peck section of the borough of Oceanport, but this proposal was rejected because of the lack of rail facilities. Further investigation in the vicinity made Army authorities decide to contract for a portion of the grounds of the old Monmouth Park Race Track from Melvin Van Keuren of Eatontown. Involved were 468 acres in an area bounded on the north by the South Shrewsbury River, on the west and south by a stone road from Eatontown, and on the east by the Oceanport-Little Silver road. Parker Creek, tributary of the Shrewsbury, traversed the entire property near the northern limits.

Said the Red Bank (New Jersey) "Register" on 6 June 1917: "For the past four years Charles Prothero has farmed the . . . property. He will continue to work the farm south of the railroad tracks but all property north of the tracks has been leased by the government. On this property is a 70-acre field of potatoes. The government will recompense Mr. Prothero for this crop."

Authorized by The Adjutant General on 16 May 1917, the proposed camp site was 42 miles south of New York City, 2½ from the Navesink River town of Red Bank. Situated on a small peninsula, the new camp would afford either water or rail transportation. The New York and Long Branch Railroad ran along the eastern boundary of the site and provided some 600 feet of siding. One-half mile distant, the

somnolent crossroads borough of Little Silver was the nearest passenger station. Oceanport, more notorious in the salad days of Monmouth County, was contiguous with the southern boundaries of the new camp.

Vanguard of the installation that was to evolve on the banks of the Shrewsbury, two "Model T" Ford trucks, packed with tentage and other equipage, made the precarious trip to Little Silver from Camp Wood, on Bedloe's Island in New York Harbor. There, on 4 June 1917, the first tents were pitched among the potatoes, the briars, and ivy that fought for breathing space in the marshes. On the following day a detachment of Depot Company H, Signal Corps, under command of 1st Lt. Adolph J. Dekker, arrived and began the arduous task of marking out and clearing the camp site. Quartermaster installations and a tent hospital had been established by 14 June. Most prevalent ailment was caused by poison ivy, 19 cases being treated during the first month.

On 17 June the camp acquired its first commanding officer, Lt. Colonel Carl F. Hartman, who assumed his authority by General Order 1, Signal Corps Camp, Little Silver, New Jersey. The new establishment was to have no other name for the first three months of its existence.

Next day Colonel Hartman welcomed the first troops to the camp, the First and Second Reserve Telegraph Battalions. The garrison began to mushroom rapidly with the advent of these units and by the end of June there was a total of 25 officers, 451 enlisted men. The first semblance of a military organization had appeared. Signal Corps training embarked on a new career amid the fire-gutted ruins of Monmouth Park and Charles Prothero's potatoes. Training at the camp was under the general supervision of Lieutenants Milliken and Corlett, who were, respectively, the Adjutant and Executive Officer of the camp, representing the Signal Office of the Eastern Department.

2. First Operations

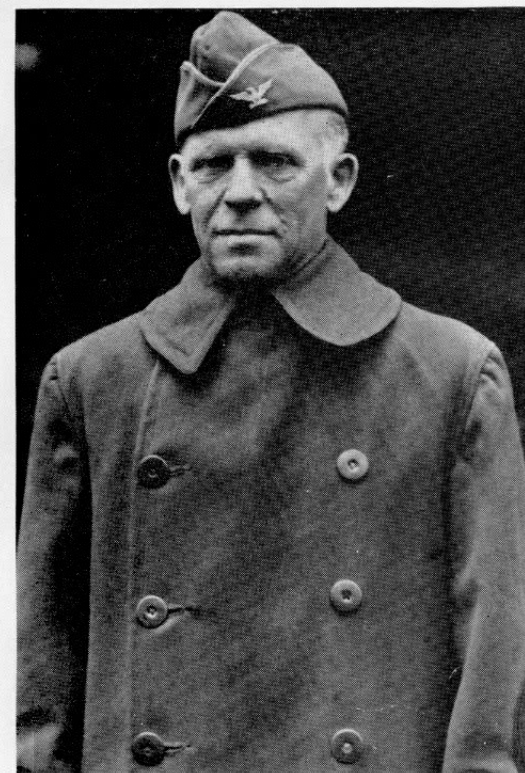
Ensconced between the Shrewsbury lagoons, Camp Little Silver began its first painful growth during June 1917. Initial construction started on buildings for administration, officers' quarters, temporary barracks, transportation sheds and shops. Erection of a warehouse was begun near the railroad sidings. From the beginning it was evident that only considerable drainage would render the area livable. This work occupied the command during the first months.

To satisfy the need for a cadre of trained personnel, 43 noncommissioned officers were shipped to the camp from Fort Sam Houston, in Texas. These men, who had been assigned along the Mexican border, spent the first night at Camp Little Silver in a railroad car on a brush-covered siding.

As recruits began arriving at the new camp, surrounding communities prospered under the wartime stimulus. In addition to the usual patriotic eulogies, the Red Bank "Register" for 4 July 1917 notes the opening of several new ice cream parlors in Oceanport; also that

the "... Little Silver rural mail route has been extended to take in the camp. This will probably bring an increase in the salary of Arthur Ryerson, the mail carrier."

Having supervised the establishment of Camp Little Silver, Colonel Hartman was relieved of his command on 12 July 1917. This duty was assumed by Major George E. Mitchell, who also commanded a Reserve Officers Training Battalion that was activated on 20 July. Trainees had been arriving at such a rapid rate that it was necessary to



COL. CARL F. HARTMAN

Commanding Officer

Camp Alfred Vail (Now Fort Monmouth)

17 June 1917 to 12 July 1917.

form three companies within the battalion. This was the earliest of all training units at the camp. The initial curriculum, instituted on 23 July, included cryptography, the heliograph, semaphore, wig-wag, motor vehicle operation, physical training, dismounted drill, tent pitching, the manual of interior guard duty, map reading, tables of organization of Signal, Infantry and Cavalry units, Camp sanitation, personal

hygiene and first aid. There was a marked absence of technical communications subjects but the reserve officers called into service in 1917 were, for the most part, basically qualified for duty with the Signal Corps.

Two tactical units, the 5th Telegraph and the 10th Field Signal Battalions, were organized at the camp in July.

Rapid progress was made during the month in clearing the area of corn, brush, and other undergrowth. Roads were repaired and extended. Facilities, however, were still crude. There were only three points in the camp at which drinking water could be obtained. The poison ivy epidemic reached a new high in July; 129 men were hospitalized.

Major Arthur S. Cowan, destined to serve as commanding officer of the post during nine years, was assigned to head the Reserve Officers Battalion on 12 August.

During this period the field battalions had begun intensive training, although equipment was inadequate. Instruction was as thorough as the situation would warrant.

It had been determined that the new camp would operate throughout the emergency period on a semi-permanent basis and on 15 September the post was officially named Camp Alfred Vail. Born at Morristown, New Jersey, in 1807, Alfred E. Vail graduated from the University of the City of New York in 1836 and early became associated with Samuel F. B. Morse. Vail's mechanical knowledge greatly expedited the first experiments in telegraphy. He devised the Morse alphabet of dots, dashes, and spaces. His automatic roller and grooved lever embossed on paper the characters that were transmitted. Vail was the superintendent of construction of the original telegraphy line between Baltimore and Washington. Inventor of the finger key, he received the first message successfully transmitted in 1844. In view of the great contributions made by Vail to wire communications it was proper that his name be commemorated in a Signal Corps training camp. Coincidental with the redesignation, Major Arthur S. Cowan assumed command of Camp Vail.

A radio operator detachment was formed at this time. The objective was to provide six weeks' intensive training in radio, with particular stress on foreign codes and languages. Simultaneously, a telephone operator course was begun. This marked the beginning of formal communications instruction.

Twelve buildings were completed by the Quartermaster in September. These included an administration building, a hospital ward, motor vehicle sheds and repair shops. Six other structures were finished by the end of October. Nevertheless, some 800 men were still housed under canvas at this time.

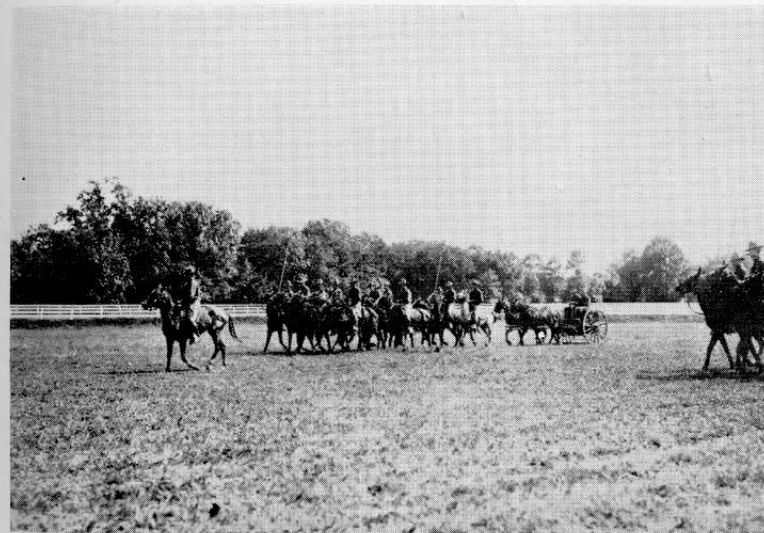
Camp Vail dispatched its first unit to the Hoboken Port of Embarkation on 18 October, when the 11th Reserve Telegraph Battalion boarded the train for its movement to the battle zone. This was the forerunner of a growing stream of men who were shipped overseas before the Armistice. 2416 enlisted men and 448 officers were

processed through the camp in 1917. A majority of these were recruits, arriving in civilian clothing, and many spent their first night in railroad cars on sidings either at Camp Vail or Little Silver station.

Training of Reserve officers continued and reached the point where mounted field exercises and road marches could be undertaken. There was still only limited instruction in communications equipment and procedure.

Shipment of troops to France grew steadily in volume; the Radio Detachment and 408th Telegraph Battalion in November; the 52nd Telegraph and 1st Field Signal Battalions in December. Camp Vail was beginning to justify its existence.

By the end of 1917 the construction program, begun in June, had been completed and a second hospital ward was being built. Single



Wire Company Laying Telephone Wires, Camp Vail, 1918.

story and made of wood, the buildings were temporary in design and were not intended for permanent occupancy. The American Red Cross, which had been performing relief work among the troops for some months, furnished much of the linen and equipment for the camp hospital. The Y.M.C.A. had been operating a recreational tent since early July.

As 1918 began, Camp Vail was in full stride. Extensive induction and processing operations required considerable personnel for house-keeping details. Accordingly, on 1 April the 13th Service Company was organized.

Tenure in office of the camp commandant was brief in the early years and on 28 June Major Cowan was relieved by Colonel George

W. Helms, who retained command for more than two years. This period was to witness the inception of the Signal School at Camp Vail and the gradual development of the Radio Laboratory.

All camp functions were disrupted in September 1918 when the influenza epidemic then sweeping the country made its first appearance. 15 cases were reported initially and the units to which the men belonged were immediately quarantined. The segregation continued gradually until the entire camp was placed in strict isolation on 30 September. All assembly points were closed and the men were not permitted to congregate. Wearing apparel of patients and bed clothing were thoroughly disinfected. Mess equipment was sterilized in boiling water. The epidemic continued through October, gradually declining until the quarantine was lifted on 2 November. 267 cases were treated in the hospital; 11 were fatalities.

With the signing of the Armistice on 11 November, the initial phase of Camp Vail's history terminated. From a marsh and a potato patch had been created a military organization that had trained the personnel for five Telegraph Battalions, two Field Signal Battalions, and one Depot Battalion during the war period. Every device used in field signal work, including a divisional wire net with underground stations, had been made available for those under instruction.

Chaotic in appearance, haphazard in growth, Camp Vail was slowly taking shape amid the bustle of war emergency. Canvas was still the primary means of shelter and it would be some years before adequate buildings would be available. Nonetheless, a solid foundation had been laid for the extensive organization of the future. The Signal Corps was firmly established in Monmouth County.

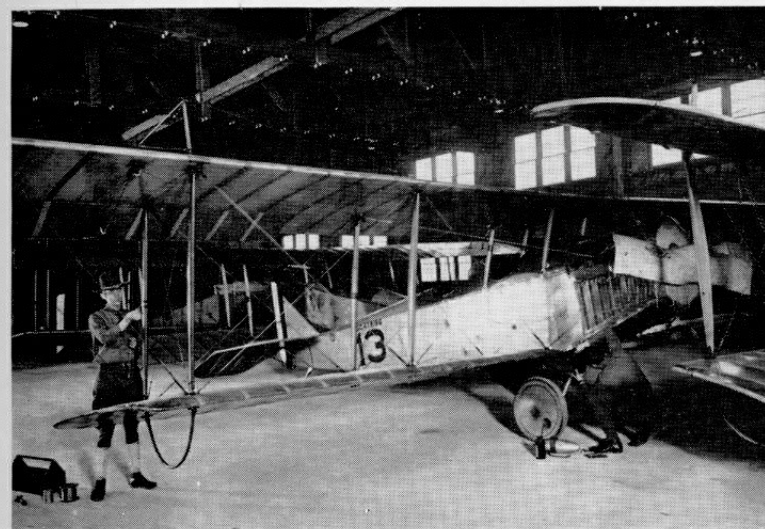
3. The Radio Laboratory

The rasping cough of Liberty motors and the throaty roar of DeHavillands violated the Monmouth atmosphere during 1918. Camp Vail, thriving as a troop concentration and training area, grew wings shortly before its first anniversary. Residents of Red Bank, Little Silver, Long Branch, Oceanport were mystified by the labored flight of "Jennies," but gradually became accustomed to the aerial circus that flew daily from the Shrewsbury banks. Military security camouflaged the function of these creaky aircraft in the airplane direction-finding experiments of the Camp Vail Radio Laboratory.

Research and development of electrical and other communications equipment have long been the responsibility of the Chief Signal Officer. As early as 1902 an Electrical Development Division was organized at Washington. The war made it evident, however, that this, and the facilities in the Bureau of Standards, were insufficient for the radio experimentation necessitated by tank and aerial warfare. Engineers of the French and British armies, invited by the War Department, strongly advised the establishment of fully equipped and staffed laboratories. Accordingly, plans were made late in 1917 to erect the necessary buildings, furnish equipment and personnel, for a Radio

Laboratory at the newly built Signal Corps camp at Little Silver, New Jersey.

The Radio Laboratory was charged with the development of radio equipment for the Army, with ultimate responsibility belonging to the Engineering and Research Division of the Office of the Chief Signal Officer. Research initially centered on vacuum tubes and circuits of current equipment, the testing of apparatus submitted by manufacturers, and application of new inventions. Laboratory workers concentrated on the design of electrical circuits and mechanical structure, the preparation of blue prints and working drawings. This work was pursued throughout the war period in close liaison with the Overseas Research section of the Chief Signal Office. That unit



Installing Radio Set on Airplane, Camp Vail, 1919.

worked closely in the field with both American and Allied armies and reported on the performance of equipment directly to the Chief Signal Officer. Commissioned personnel traveled constantly between Camp Vail and France with models of new equipment for field and battle trials during 1918.

Construction of the Laboratory was begun in mid-December under the direction of 1st Lt. Morris E. Brown. In addition to the laboratory buildings, the Heddon Construction Co. began work on four airplane hangars and began levelling and draining ground for two flying fields.

Equipment had begun to arrive at such a rapid rate in January 1918, that Capt. Albert Burton was made Supply Officer. Several officers were assigned to operate the Laboratory and on 25 February,

Major Lincoln B. Chambers was made Commanding Officer. The first month was spent in unpacking equipment and organizing the Model Shop and Drafting Section.

The 122nd Aero Squadron, Service, reached Camp Vail from Kelly Field, Texas, at the end of March. This unit was to maintain and repair all equipment and aircraft used in aerial experiments. Most of the enlisted and officer personnel were completely inexperienced with aircraft, many never having seen an airplane in the air. Only through concerted effort and diligence did the squadron improve its efficiency through the coming months to the point that Camp Vail aircraft were operating dependably and on schedule. Upon arrival the squadron promptly reported several cases of measles and was quarantined. This, together with inexperience and inclement weather, prevented the first flights until the beginning of May 1918.

By April the installation of motor generator sets, a battery charging plant, and the sectionalizing of laboratory buildings had progressed rapidly. Two buildings were assigned to research and development work, another for design and drafting, a fourth for a model shop. The month witnessed the installation of electrical equipment, machinery, drafting and laboratory tables, fire-proof safes, and the tool units. Major Chambers was relieved from command of the Laboratory and no immediate successor appointed. The officers in charge of the Design, Research, and Flying Sections formed a committee, reporting directly to the commanding officer of the camp on all except technical matters.

The first airplane was ready for flight on 1 April but no flying personnel was available. Lt. N. Fry, the first pilot to arrive, was immediately appointed Flight Officer. Eight other pilots reached camp shortly thereafter. The men of the 122nd Squadron, having recovered from the measles, prepared the field and Lt. Fry, on 5 May, with a throng of people from nearby towns crowding the roads, made the first flight from the new field. Following this historic event, work with radio direction-finding equipment required an average of 55 to 60 flying hours, 90 to 95 flights weekly. Residents of the county mistakenly assumed that the primary function of Camp Vail was as an airfield.

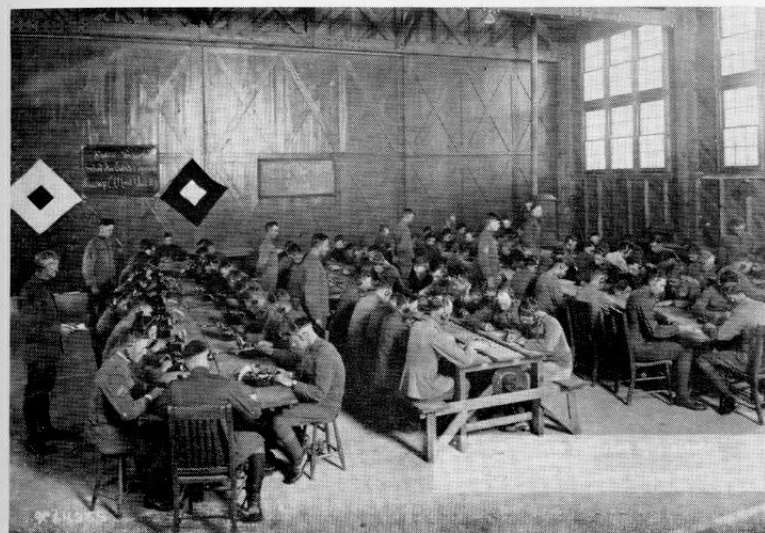
As the Laboratory prepared for the first operations it was divided into two functional branches. Capt. Nathan Levinson was placed in charge of the Design Section, Capt. Ralph Brown in Research. Among the original projects were the testing, standardization, and specifications of radio vacuum tubes in airplane direction-finding. Development work began on two radio telegraph sets and airplane radio telegraphy. A Service Group was organized in the Research Section to coordinate the laboratory and aircraft operations.

The 29th Service Company, activated on 15 June, was assigned to the Laboratory to provide enlisted personnel for that organization. 45 buildings were in use by June and a 10-foot barbed wire fence built around the entire area.

From four projects at its inception, the Laboratory grew so rapidly that 44 experiments were under way by August. The utmost latitude was given industrial engineering firms. The Laboratory worked

closely with such organizations as Westinghouse Electric, General Electric, International Radio, General Radio, De Forest Telephone and Telegraph, National Electric, and Marconi Wireless Telegraph. Spark and continuous wave sets, radio-telephone, tank radio, and air direction-finding equipment were among projects developed at Camp Vail during the World War.

Meanwhile, aerial activities had continued unabated. On 15 October an ordnance plant at Morgan exploded and Lt. Smythe piloted the engineer who had designed the plant over the area. Despite the danger from pieces of steel and other debris hurled into the air, they were able to complete the mission and report with information vital to the control of the fire. One pilot reported a German submarine



School for Enlisted Specialists, Radio Department,
Signal Corps Schools, Camp Vail.

five miles off Asbury Park and the Brooklyn naval base was notified. Several Navy planes and craft were dispatched but were unable to locate the vessel. Only one serious accident occurred at Camp Vail. On 18 August a crash while landing took the life of Lt. Meril.

On 18 October there were 20 ships in the hangars, the most ever housed at Camp Vail. These included two De Havilland 4's, nine Curtiss JN4-H's, six Curtiss JN4-6HO's, three Curtiss JN4-D's. Kept in the air without outside assistance, the operation of these airplanes was a testimonial to the tenacity and spirit of the 122nd Squadron.

The Armistice brought an abrupt termination to the brief aerial career of Camp Vail. On that day the 122nd Squadron left for Hazelhurst Field, Long Island, where they were to join the First Provisional

Wing for shipment to France. An Air Service Detachment was organized at the camp from recruits recently arrived from Mineola. This unit functioned only in closing out the activities of the air operations. The first shipment of airplanes was made on 15 November; the hangars were empty by 19 December. The Vail airfields would live only in the memories of the older inhabitants.

At the end of the war the Signal Corps had a highly efficient research and experimental organization in Monmouth County. 10 officers, 76 enlisted men, and 28 civilians constituted the staff. General Squier was able at this time to report: "The work of standardization and quality production of vacuum tubes, accomplished during the last 18 months under the pressure of military necessity, represents an advance in the art of electrical engineering which will prove of inestimable value to this country and to the engineering world at large."

4. Beginning of the Signal School

Since battle efficiency is the ultimate goal of all military training, Army schooling during peace must be directed toward that end. The function of the Signal Corps in war requires a degree of proficiency for which a firm basis must be laid during the peace years.

A communications school for enlisted specialists was opened at Fort Myer, Virginia, in December 1898. Courses included telegraphy, telephony, line repair and visual signaling. Code operators were required to attain twenty words per minute. All Signal recruits were trained at Fort Myer for some years, an average of six months being required. In addition, a small number of officers were instructed annually.

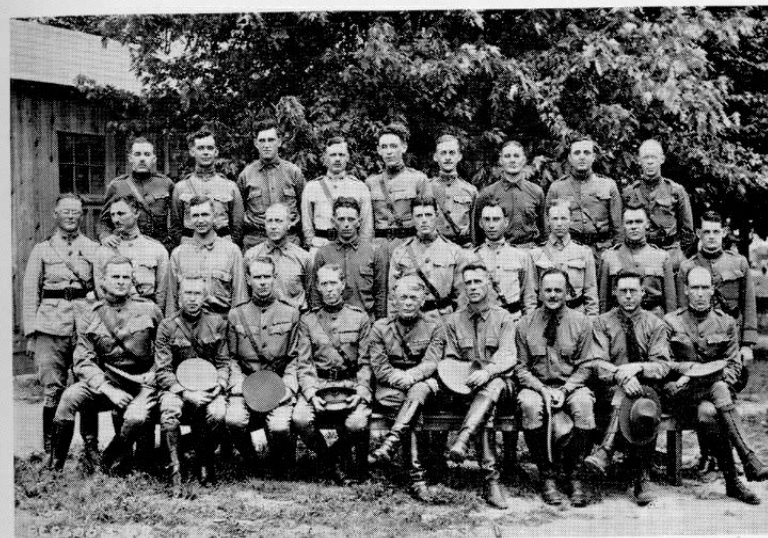
In 1905 the Army Signal School, instituted at Fort Leavenworth, Kansas, was part of the system of officer training that included the Staff College, the Infantry, and Cavalry Schools. Stressing particularly the practical phases, the course included electricity, dynamos, motors, batteries, power transmission, signal engineering, submarine cables, telegraphy, radio, telephony. Enlisted instruction was concentrated at Forts Wood and Omaha in 1912, although the latter post was soon combined with the garrison at Leavenworth.

Desiring to integrate training activities more closely and to concentrate Corps installations, the Chief Signal Officer proposed the removal of the school to Camp Vail in 1919. This was approved by the Secretary of War on 4 September 1919, Colonel Helms being named School Commandant in addition to commanding Camp Vail. Major Robert Davis was appointed Director and placed in charge of both the Officer and Enlisted Divisions. He subsequently became the Assistant Commandant in the summer of 1921, at which time the post of Director was assigned to Major George L. Van Deusen, long associated with Fort Monmouth.

The initial curriculum of the school, as it began instruction at Camp Vail on 2 October 1919, merits close examination. The Officers' Division was subdivided into the following courses: radio engineering,

telegraph engineering, telephone engineering, signal organization, and supply. There were four basic Enlisted courses. The Radio Specialist course consisted of radio electricity, photography, meteorology, gas engine and motor vehicle operation; Electricity students were trained as telephone and telegraph electricians. There were Operator and Clerical courses, in addition.

Original entrance requirements consisted of written and physical examinations. Civilians were encouraged to apply but through the years most of the students were noncommissioned officers who had



ROTC, Fort Monmouth, 1921.

Left to right (first row): Maj. DeLano, Sig C; Maj. Van Deusen, Sig C; Maj. Glassford, FA; Maj. Burleigh, Inf; Lt. Col. Hemphill, Sig C; Maj. Truesdell, Sig C; Maj. Brant, AS; Maj. Worcester, CAC; Maj. Sawyer, CAC; (second row): Capt. Lattin, Sig C; Capt. Walker, Sig C; Maj. Crawford, Sig C; Maj. Ingles, Sig C; Capt. Hale, Sig C; Capt. Sherrill, Sig C; Capt. Petzing, Sig C; Maj. Mendenhall, Sig C; Capt. Autrey, Sig C; Capt. Clayton, Sig C; (third row): Capt. Code, Sig C; Capt. Yuill, Sig C; Capt. Watson, Sig C; Capt. Kurtz, Sig C; Capt. Clay, Sig C; Capt. Hoorn, Sig C; Capt. Raumbaugh, Sig C; Capt. Powell, Sig C; Capt. Bullens, Sig C.

been recommended to the school by their commanding officers. The first term ended 10 August 1920 when 224 enlisted men were graduated. No officers were graduated, although five had begun the courses. The need for commissioned personnel in the field had prevented their completing the schooling.

All aerial activity having ceased during 1918, the hangars were used by the school as work shops and class rooms. They have continued in this capacity down to the present. The throb of airplane

engines has been replaced by the hum of motor generators and the instruction of Signal technicians.

A course in meteorology had been authorized as early as September 1919. Equipment was to be brought from France. Most of it was found to be very badly damaged in shipment and some time was required to rehabilitate and prepare it for use. The first classes began instruction on 5 January 1920 with ten students attending.

Training of ROTC personnel was to develop into a major function of the Signal Corps School. The first classes began in June 1920 when 225 students from ten universities and colleges were enrolled. The instructing staff included 30 officers and 12 noncommissioned officers. The first instruction for National Guard and Reserve Officers began in 1921 when eight students took the three-month course. During 1922 the Officers' Division reorganized its courses into two main sections, a Company Officers' course for Signal Corps officers, and a Basic Course in Signal subjects for officers of other arms and services and for newly commissioned Signal officers.

During the school year 1922-23 the Signal School was regrouped into four departments: Communications Engineering, Applied Communications, and a General Instruction course, all for officers; and the Department for Enlisted Specialists. The courses given Regular Army officers were of nine months' duration. Enlisted courses included radio electrician, telephone and telegraph electrician, both basic and advanced, and meteorologist.

Designed primarily for the training of Signal Corps personnel, the school was handling men of several branches of the Army by 1921. To eliminate possible confusion the name was officially changed to "The Signal School" in that year. This title was retained until 1935 when it again became the Signal Corps School.

Instruction of photographers was started as early as 1919 and laboratory facilities were available by 1926. The pictorial service having become a function of the Corps during the War, stress was placed upon the training of skilled technicians. By 1930 instruction was being given in motion picture technique. These courses were discontinued and further training reverted to the Army War College in 1932.

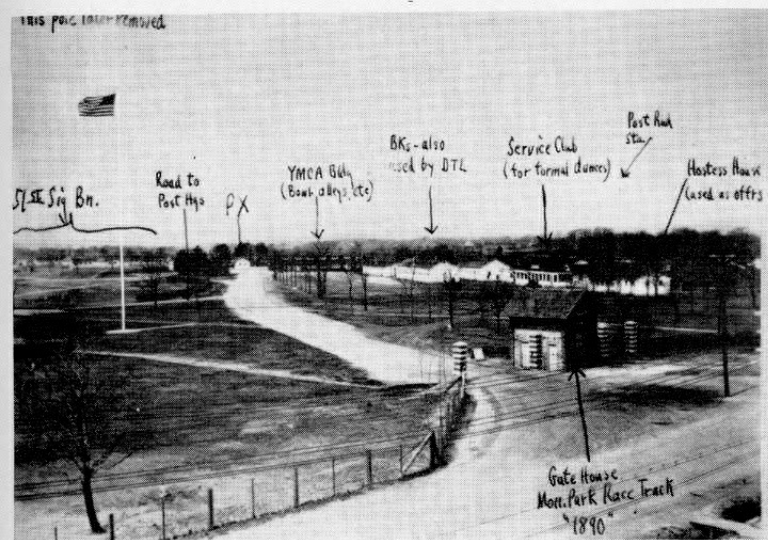
It early became evident that many technical books and publications would be required in the operation of the school. A training literature section was formed in 1921 under the Assistant Commandant. This remained as one of the three departments of the school until 1941. The writing and publishing of training manuals, regulations, school texts, and other technical material was the mission of this section. As the Signal Corps Publications Agency it has done yeoman service down through World War II.

As Camp Vail organized for peace in 1919, the Radio Laboratory, while still a major activity, ceased to be the most important function of the post. By mid-1920 this position had been assumed by the Signal School. Through the lean years of peace and down into the feverish period of the new war the School has remained the largest organization at Fort Monmouth. Graduates of the institution, both officer and

enlisted, have filled every position in the Signal Corps. All the manifold activities of the Corps have been ably performed by personnel who were given their basic and advanced technical training in the Monmouth area.

5. The Record to 1925

Conceived and born during the wartime emergency, Camp Vail had grown into adolescence by the time of the Armistice. Originally little more than a field bivouac, the camp had become the most important Signal Corps installation in the history of that branch of the service.



Camp Alfred Vail, 1923.

At the end of 1918 a total of 129 buildings had been erected, 47 of them for the Radio Laboratory. The return of troops from France increased during the winter and spring of 1918-19 and discharge became a major problem. At the conclusion of the War there was a total of 2,712 officers, 53,277 enlisted men in the Signal Corps. Discharge of all emergency personnel had been effected by September 1919.

Activated as Company B, Signal Corps, at Camp Wikoff, New York, on 27 July 1898, the 15th Signal Service Company has had the longest record of any unit permanently assigned at the Little Silver camp. This company was the first unit to reach camp under the regrouping system then in effect. The trip was made from Camp Meade, Maryland, on 4 March 1919. Functioning as the parent or-

ganization for all new recruits and for camp and school details, the 15th had an average of 840 men in 1920. Students at the Signal School were attached for rations, quarters, and administration. The 15th, existing alternately as a company, battalion, and regiment, has had a long, although unspectacular, career at Fort Monmouth, losing its identity only late in World War II.

At the beginning of 1919 temporary barracks were sufficient to accommodate 2,795 enlisted men and 188 officers. The camp hospital could provide bed space for 40 persons. The stables could house 500 animals. Storage facilities were inadequate, although ground was available for the construction of large depots and warehouses. The terrain in and about the camp, marshy and sandy in character, varied from gently rolling to flat. The average altitude approximated 9½ feet above mean tide. Despite the marshy character of the Shrewsbury lagoons, the war years had shown that the site was a relatively healthy one and the hospital records compared favorably with other Army posts.

In a letter to the Secretary of War in January 1919, the Chief Signal Officer, Major General Squier, considered that "... the development facilities afforded at (the) laboratories are the result of 18 months' work on construction and collection of apparatus, tools, and machinery and have made these laboratories highly efficient. It would be difficult to find an equally efficient combination of laboratory and shop buildings, quarters, flying fields, and open country for the testing of radio apparatus." Commenting on a suggestion to move the Radio Laboratory from Camp Vail, the General continued:

"To duplicate this plant or to remove it to another location and to do the work of grading a flying field, erecting similar buildings, and providing like facilities would obviously be an unjustifiable waste of money. The collection of electrical laboratory instruments for testing, the shop and blue-printing equipment is probably the finest in any government laboratory. . . ."

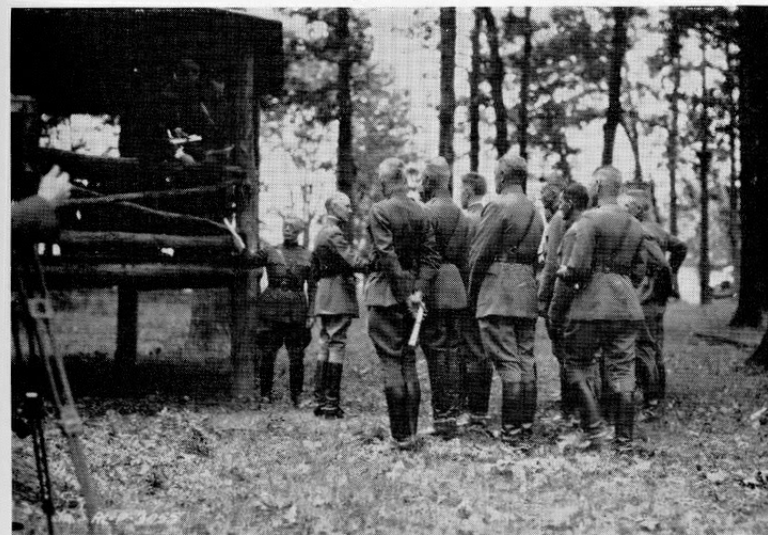
With the cessation of hostilities and the emergence of Camp Vail as a discharge center for Signal Corps personnel, the relative importance of the Radio Laboratory decreased steadily. By 1920 that organization consisted of two officers, four radio engineers, two civilian assistants, and eight enlisted men. Divided into the Research, Specification and Design, Model Shop, and Supply Sections, Laboratory activities continued on a greatly curtailed basis. The first two of the sections were each in charge of an Engineer, the Model Shop under a Foreman. All functions were coordinated by the Commanding Officer of the Laboratory. So sharply had activities declined that in 1924 only four buildings were retained for experimental purposes, although two radio antenna towers and other equipment had been added to the facilities.

As of 1923 the cost of the camp, including all the construction, was approximately \$1,222,000. The land comprising the camp site had cost the Government \$93,000 and additional purchases aggregating \$20,000 had been approved.

The value of carrier pigeons for emergency communications had been proven repeatedly during the war. Following the Armistice it



LT. COL. JOHN E. HEMPHILL
Commanding Officer
Camp Alfred Vail (now Fort Monmouth)
16 December 1920 to 1 September 1925.



Officers' School Graduation, About 1924.
Lieutenant Colonel Hemphill, General Squier, in center.

was decided to establish the headquarters of a Pigeon Service at Camp Vail in 1919. The services of Colonel A. H. Osman, Officer-in-Charge of British Army and Navy Pigeon Services, were secured for the purpose of collecting a stud of pedigreed birds in Europe. Arriving from abroad in October 1919, 150 pair of breeders were transported without loss to Camp Vail. At the time this was thought to be the finest collection of Racing Homers in the world. One fixed and fourteen mobile lofts were installed at the camp under the direction of Lt. Delhauer, who, as a civilian, remained in charge of pigeon activities at the camp until 1925. Valuable work was done during the years in planning and developing new techniques for the training of the birds, improving the strains, perfecting two-way and night flying.

Having completed two years as Camp Commandant, Colonel Helms was transferred on 15 December 1920 and succeeded by Lt. Col. J. E. Hemphill, who commanded Camp Vail for five years. This period was vital in the history of the post. The Laboratories and Signal School were to develop steadily into experimental and training units that would prove of utmost importance in the long term growth of the Signal Corps. The technical and functional pattern of Corps activities in World War II was basically formulated in the two decades following the first War.

Construction and maintenance were of major importance during the years 1920-1925. The cantonment type barracks required constant attention to prevent a serious state of disrepair. Building of a new waterworks and water tower, a permanent flag pole, two sets of radio towers, a permanent warehouse near the railroad tracks, and the resurfacing of roads were typical of the work done at Camp Vail during this period. Fire gutted the surgeon's office at the hospital and the old Knights of Columbus building in the winter of 1921. In place of the latter a Service Club was constructed almost immediately. Flames took an additional toll when two buildings occupied by the 1st Signal Company were burned to the ground in 1924. Camp Vail was still in a nebulous stage during the early 20's.

Paramount among the accomplishments of Colonel Hemphill's regime was the establishment of the Signal Corps Board. On 22 April 1924 the Colonel recommended to the Chief Signal Officer that such a board be instituted at the camp. Further, "The need for a board of Signal Corps officers to be continuously assembled at a center of Signal Corps activities for the consideration of problems of organization, equipment, and tactical and technical procedure has long been recognized. Preferably such a board should consist of officers of considerable rank and length of service in the Signal Corps who would be competent to pass on such questions and would also be able to devote their entire time to the duties of such a board. Due to the shortage of personnel it does not appear that it will be practicable to detail such a board in the near future. The best present arrangement would seem to be a board at Camp Vail consisting of the officers at this post who are immediately connected with the administration and supervision of matters relating to general Signal Corps training. Detailed studies, experimental work, or field tests could be delegated, from time to time, by this board with the approval of the Commanding

Officer, to the proper subordinates at Camp Vail. It is therefore recommended that a permanent Signal Corps Board be constituted at Camp Alfred Vail to act on such matters as may be referred to it by the Chief Signal Officer."

Army Regulations 105-10 directed the establishment of such a board, 2 June 1924. Members of the first Board were Majors C. N. Sawyer, Frank Moorman, and Harry C. Ingles. The latter would, in World War II, assume the grave responsibilities of directing the worldwide activities of the Corps as Chief Signal Officer. Between 1924 and 1940 such names as Capt. Jay D. B. Lattin, Capt. Edgar L. Clewell, Col. A. S. Cowan, Major George L. Van Deusen, Major S. H. Sherrill, Lt. Col. Roy H. Coles, Capt. Fred G. Miller, Col. Dawson Olmstead, Col. William O. Reeder, all distinguished in Corps annals, appear on the roster of Board members.

A detailed account of the accomplishments of the Signal Corps Board would require a volume. The work has never been stereotyped and no case can be taken as typical. Tables of Organization, Allowances and Equipment; Efficiency Reports; Signal Corps Organizations; Splices in Field and Outpost Wire; Signal Corps Transportation Needs; Job Specification for Occupational Specialists; Defense Against Mechanization; Message Center Procedure; Messenger Vehicles; Military Characteristics of Telephone Tool Equipment; such are a small portion of the cases considered by the Board since its inception. An attempted evaluation of the work performed by the Board would cover every phase of Signal Corps operations. It has been highly instrumental in the present elaborate development of Army communications.

Other than the 15th Signal Service Company, two tactical units have been integrally associated with Fort Monmouth almost from the beginning. These are the 51st Signal Battalion, a Corps field unit and the only Signal battalion during the peace years; and the 1st Signal Company, tactically a component of the First Division but making its headquarters at Fort Monmouth until 1941. These organizations were almost as much a part of the camp as Oceanport Creek.

Activated as the 5th Telegraph Battalion 12 July 1917, at Camp Little Silver, the 51st Signal Battalion has had an active and honored history. The first commanding officer was Major C. R. Corlett, Infantry. It was redesignated the 55th Telegraph Battalion in October 1917, with Major J. H. Stutesman assuming command on 1 January 1918. Embarking from New York on the transport "Agamemnon" in April, the battalion reached Brest, France, 6 April, proceeded to Gievres where it was assigned to the 3rd Corps on 1 July. Participating actively in the Marne Defensive, the unit next was transferred to the 5th Army Corps in time for the St. Mihiel Offensive in September 1918 and the Meuse-Argonne Offensive, which lasted until 11 November 1918. The Battalion was cited by Major General Summerall, Corps Commander, for meritorious service in battle.

After its march into Germany, where extensive rehabilitation was performed on communications systems, the unit returned to America in 1919. A short stay at Camp Mills was followed by the return to

Camp Vail on 17 June 1919. The unit was then assigned to the post as a permanent garrison organization. The name was changed finally to the 51st Signal Battalion in 1921.

Peacetime duties of the battalion consisted primarily of training of replacements for units throughout the Signal Corps, post service functions, and status as the active component of the 50th Signal Battalion, which was inactivated in 1922. At Camp Vail the battalion furnished men for such purposes as the camp library, Post Exchange, gymnasium, and other such activities. Battalion training was maintained at all times and men prepared for the Signal School. As organized in 1924 there were a Headquarters and Headquarters Company, one Construction Company, and an Operating Company. During later years the 51st made annual trips for Army and Corps maneuvers throughout the eastern states.

Beside the 51st Battalion, the 1st Signal Company was also stationed in garrison at Camp Vail. This outfit had an even longer and more storied career. Organized 27 July 1898 as Company A and D, Signal Corps, it saw action in Puerto Rico during the Spanish American War. As the Second Field Battalion it served in the World War with the famed First Division and participated in the following battles: Lorraine, Meuse-Argonne, Picardy, Montdidier-Noyon, Aisne-Marne, and St. Mihiel. The Battalion was awarded the French Croix de Guerre with two Palms and a Gold Star. Renamed the 1st Signal Company while at Fort Dix in February 1921, the unit moved to Miller Field in May of that year, returned to Fort Dix for divisional maneuvers and then was permanently assigned to Camp Vail 22 October 1922. Shortly after the return from Germany the organization existed almost solely on paper for some time. The entire roster consisted of two Master Sergeants in August 1919.

The 1st Signal Company functioned for some years at Camp Vail in a capacity similar to that of the 51st Battalion. Yearly maneuvers with the First Army and the Division furnished practical application for the extensive schooling given the personnel during the remainder of the year.

Part III

METAMORPHOSIS AND GROWTH

1925 - 1930

PART III

METAMORPHOSIS AND GROWTH

1925 - 1930

1. Designation of a Fort

Camp Vail had grown but little beyond the cantonment stage in 1925. Except for the warehouse, there were no permanent structures on the post. However, five years of effort were to prove rewarding for Colonel Hemphill, who was to see the camp declared a permanent military establishment prior to his transfer.

It had long been evident that the Signal Corps installations at Little Silver had assumed such importance in the development of the Corps that abandonment of the facilities would be unjustifiable. Office Memorandum Number 64, Office of the Chief Signal Officer, dated 6 August 1925, states, "The station now known as Camp Alfred Vail, New Jersey, is being announced in War Department General Orders as a permanent military post and will hereafter be designated as 'Fort Monmouth,' New Jersey. Mail to that post will be addressed to Fort Monmouth, Oceanport, New Jersey." Thus the Signal Corps camp joined the ranks of permanent garrisons in the military establishment, honoring in name the men of the Revolution who fought and died on the fields of Monmouth.

Shortly thereafter, 1 September, Colonel Hemphill was transferred to Washington. He was relieved by Colonel James B. Allison, who assumed command of the Signal School at the same time. Colonel Allison, through his strong personal enthusiasm and drive, injected a spirit of progress into all activities on the post.

Two miles of macadam roads had been built on the grounds by 1925 and there were two polo courses and an athletic field for troop recreation. Polo had been a favored sport since 1921 and the Army team had trained at Camp Vail in 1924 in preparation for the championships held at nearby Rumson that summer. The original landing field was continued in operation as late as 1925, functioning as an emergency strip in the National Model Airways system.

The Post radio station, WUBA, was operating at that time in the Second Corps Area radio net. Contacts were made regularly with Governor's Island, Mitchel and Bolling Fields. 24,430 words were sent and received, using 1927 as a typical year. Rebuilt that year, the station had its call sign changed to WTW in 1929.

As Fort Monmouth, the camp was to undergo a renovation that would almost completely alter the physical appearance. First step in the process was a meeting in the office of Colonel Allison on 6 April 1926. A board of officers, consisting of General Saltzman, Chief Signal Officer, Colonel Hemphill, and Colonel Wheaton, Quarter-

master Corps, met to discuss with Colonel Allison the erection of permanent barracks and a hospital building. These plans were eventually approved and implemented by Public Law Number 177, 69th Congress. Construction, begun in 1927, was completed under contract on 9 April 1928.

Four barracks were built, each similar in appearance but varying slightly in dimension. Reinforced concrete and brick, with slate roofs, were used. Boiler rooms, storage rooms, and workshops were in the basements; offices, day rooms, mess halls, and kitchens took up the first floors; the second and third floors were occupied by squad and washrooms. Porches ten feet in width extended the length of the buildings at each floor level. The barracks were designed to house one company each, total capacity 805 enlisted men.

Constructed simultaneously, the hospital was built in a broad-H shape, of which only one wing was completed in 1928. Space was provided for 35 beds, laboratories, kitchens, mess halls, and staff quarters. The second wing was not built until 1934.

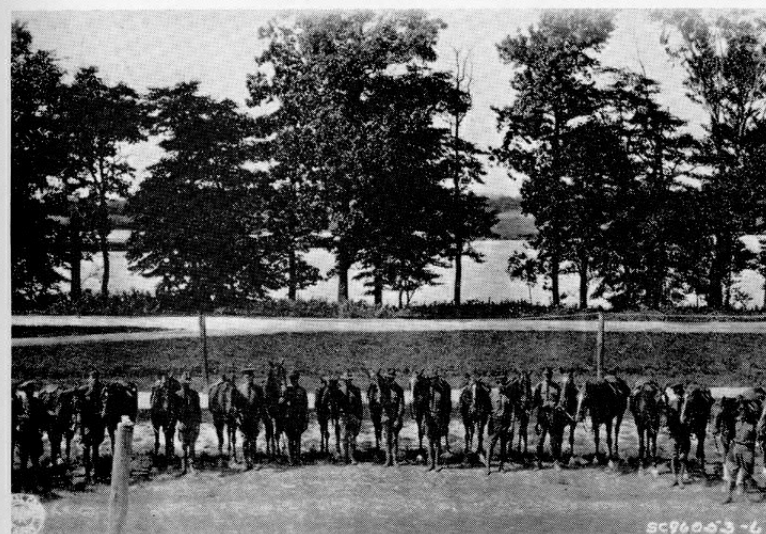
A general plan for the construction of permanent works at Fort Monmouth was prepared in 1928 under the direction of Major General B. T. Cheatham, the Quartermaster General, and approved by the Chief of Staff for the Secretary of War. This provided for abandonment of the area east of Oceanport Avenue, including the landing field, hangars, and the Quartermaster area. The proposal was later modified, the acreage beyond the road retained in the reservation.

In June 1926 Colonel Allison was replaced as Commanding Officer by Lt. Colonel George E. Kumpe, who had been active at the post for some years. After three years, he, in turn, was transferred and replaced by Colonel Arthur S. Cowan in June 1929. Colonel Cowan, who had previously commanded Camp Vail in 1917-18, retained his later authority for almost eight years. His vision, efficiency, and initiative contributed perhaps more than any other individual toward the final establishment of Fort Monmouth as one of the outstanding Army installations. Almost every Signal officer who was to lead Corps operations in World War II served in some capacity at Monmouth during Colonel Cowan's regime. Included were Major General H. C. Ingles, Chief Signal Officer; Major General Rumbough, Chief Signal Officer of the European Theater; Major General Akin, Chief Signal Officer for the Southwest Pacific; Major General George L. Van Deusen; Brigadier Generals Stephen H. Sherrill, G. C. Black, Richard B. Moran, Edgar L. Clewell, Emil Lenzner, C. H. Arnold, W. O. Reeder, H. L. P. King, Gardner, Matejka, Back, Milliken. These men were associated with every phase of Signal operations in the recent conflict.

The affiliation of the Signal Corps with amateur radio operators, a function originated and controlled at Fort Monmouth, was designed to aid in the mobilization of civilian manpower in the event of local or national emergency. The value of self-trained amateurs has been demonstrated during the war. They provided the largest pool of skilled operators in the country. In event of emergency the commer-

cial organizations would need all their operating personnel and the only possible source for the Army would be the licensed amateurs.

In 1921 efforts were made to organize the amateurs. The Signal Officer of the Second Corps Area fostered an Amateur Radio Reserve but this was engulfed in the wave of commercial broadcasting that swept the country in 1922-23. No further attempt was made until October 1924, when the Radio Division of the Signal School at Camp Vail proposed a plan for training amateur operators for emergency use. The original plan was not acceptable to the Chief Signal Officer. After several revisions and conferences with officials of the American Radio Relay League at Hartford, Connecticut, the revised proposals were submitted to The Adjutant General in May 1925.



Equitation Class at the Signal School, About 1921.

After approval the project was outlined to the amateur operators in "QST," publication of the Relay League. The response was overwhelming and Corps Area Nets were established throughout the country, effective 1 November 1925. Each of the corps areas formed sectional radio nets and were all coordinated through the control station, 2CXL-2XBB, which was at Fort Monmouth. Two short wave transmitters were used, each powered to 250 watts. Beside contacting the net stations, almost every foreign country was worked. The longest range of communication was with Australia, a distance of 11,820 miles.

The training and maintenance of a large reservoir of radio operators was to pay dividends in the second World War. The urgent

wartime need for skilled men was greatly alleviated by the far-sighted program instituted at Fort Monmouth in 1925.

2. Development of the Signal School

By the middle 1920's the Signal School was firmly established as the largest training installation in the Corps. The Officers' Division was still composed of Communications Engineering, Applied Communications, and General Instruction Sections. Engineering was emphasized more emphatically for student officers of the Signal Corps than for those of other branches. Instruction had become more comprehensive; the curricula provided a broad coverage of the field of communications in all its ramifications. Inspection trips to such organizations as American Telephone and Telegraph, Western Union, and Western Electric were conducted at the end of each term. The trips were voluntary and at the students' expense. Observation of equipment under operating conditions was definitely beneficial to the School personnel.

The terminal feature of the courses had become the annual terrain exercises of the Army War College. Field maneuvers were simulated and excellent opportunity afforded for the practical application of classroom theory. The radio, telephone, and telegraph sections of the Department of Enlisted Specialists also participated in the exercises.

Colonel J. B. Allison relieved Colonel Hemphill as School Commandant on 1 September 1925. Major G. L. Van Deusen also returned as Assistant Commandant that year. War College maneuvers were continued at Camp Dix in 1926. The Department of Training Literature was occupied with the preparation of officer correspondence courses.

The Enlisted Department in 1926 graduated 114 specialists. These included 25 telephone electricians, 58 radio electricians, 10 telephone and telegraph electricians, and 21 meteorologists. In addition, a small number of commissioned and enlisted personnel were trained each year as pigeon technicians. These figures can be taken as typical of the period 1923-1935. The annual enrollments did not undergo radical change until the later depression years.

The Signal School at this time was charged with the conduct of the Fort Monmouth Post School. This involved primarily the training of personnel of the 51st Signal Battalion and 1st Signal Company. The aptitude and basic qualifications of these men were somewhat lower than normally required of regular enrollees, and it was not possible to provide comparable instruction. A further problem was the laxity in allowing students without proper qualifications to enter the regular classes. This maladjustment existed in the Officers' divisions as well as the Enlisted Department and caused severe complications in training procedure.

Two weeks in May of 1927 were spent at the Joint Army-Navy Exercise and the Army War College Exercise at Fort Adams, Rhode Island. Duties were limited to the operation of message centers and

field telephone switchboards but the experience was of considerable value. Inspection trips were continued, including radio station WJZ at Bound Brook, New Jersey, and the Radio Corporation of America trans-Atlantic facilities at New Brunswick.

A printing plant was authorized for the School in 1927 by the Joint Congressional Committee on Printing and some equipment was made available by the Quartermaster. At this time the inadequacy of the school buildings became particularly acute. More than half a million dollars' worth of valuable equipment was stored in highly inflammable structures and the danger of fire was serious.

Officer students at the Signal School were from several of the arms and services, with the Signal Corps and Infantry predominating.



ROTC Men Departing Little Silver Station, August, 1921.

Coast Artillery, Cavalry, and Field Artillery furnished annual quotas. Occasionally the Marine Corps sent commissioned personnel for technical instruction at Fort Monmouth. Officers of foreign armies began to appear at this time, although never in large numbers. A Peruvian lieutenant attended the 1927-28 class but was relieved and did not graduate.

In 1928 the War College maneuver was a map exercise held in Washington. One student officer was assigned as a signal officer on each of the provisional GHQ or army staffs. Two of the School instructors were detailed as signal umpires.

Major Van Deusen, on the basis of seven years of experience with the School, recommended strongly in 1929 that the Signal and Post Schools be combined. This move was designed to conserve

badly needed manpower, increase student morale, and promote the prestige of the school with the student body. This situation had become serious as military appropriations were trimmed each year to the point that only a minimum of funds was available.

An experiment was tried in the summer of 1928 when Reserve Officers were trained jointly with men of the Citizens' Military Training Camp. They were used as instructors and the procedure proved so satisfactory that it was repeated the following year.

Intelligence tests were instituted in the summer of 1929 in an attempt to improve the quality of students selected for the school, since the presence of slower students had had a deleterious effect upon the classes and had made instruction more difficult. It was also again proposed that more care be exercised in selecting officer student personnel, particularly those from other branches.

3. Pigeons

The half light of early dawn was repeatedly stabbed by long fingers of flame. Violent explosions rent the air. The acrid smell of gunpowder mingled with the stench of dead bodies. Mud, blood, and death were everywhere. Out of the sky there was a flutter of wings and a pigeon dropped exhausted before the headquarters tent. The feathers were torn, a jagged stump hung from a breast that had been ripped open by red hot steel. But on the remaining leg a message blank was intact.

Surrounded by the Germans and steadily losing ground, Major Whittlesy, commander of the now famed "Lost Battalion," had tried every means of getting a message through to headquarters. He had seen runner after runner picked off by rifle and machine gun fire. Finally, in desperation, he had dispatched "Cher Ami," a carrier pigeon attached to the battalion. When every other method had failed, the stout heart of an Army bird saved the day. The men were rescued from annihilation.

Folk-lore indicates that as a message bearer the homing pigeon dates back to King Solomon, and was extensively used by the Greeks. Experience in two wars has proven that the birds are a dependable means of communications when even the most intricate electrical devices fail.

All of the armies used carrier pigeons for communications during the World War. General Pershing had been so impressed by their employment in the British and French armies that he had requested that such a service be inaugurated in the American Army. General Russel, Signal Officer for the AEF, had written the Chief Signal Officer, General Squier, suggesting the establishment of such a project. Consequently, in November 1917, the Pigeon Service was organized under the command of Major Frank J. Griffith. Birds were obtained from pigeon fanciers with considerable difficulty and it was not until February 1918 that a unit consisting of 3 officers and 118 enlisted men arrived in France.

Before the end of the war the Service had a total of 110 lofts and 10,000 birds in the United States. The Pigeon Breeding and Training

Section was established at Monmouth with birds sent from France and others purchased in England. During 1920-25 the Pigeon Service continued its activities at Fort Monmouth under Mr. Ray R. Delhauer, former Army lieutenant. Mr. Delhauer resigned in June 1925 and was succeeded by another civilian, Mr. Thomas Ross of Philadelphia.

In 1925 the section had a breeding base with 75 pairs of breeders, two flying lofts with 100 birds for training and maneuvers, and one standard stationary loft with 30 long distance flyers. Available facilities permitted the breeding of a maximum of 300 birds per season. That number was banded and held available to fill requisitions from the 18 lofts scattered throughout the United States and possessions. Pigeons were being used for instruction courses in ROTC and CMTC



Detached Mobile Loft, Pigeon Section, 1925.

camps and in the Signal School maneuvers. A twelve-hour course was included in the Officers' Division. Yearly entries were made in association races and shows. The Monmouth birds always performed well in competition, winning prizes in races and exhibitions.

The 1st Signal Co. was using pigeons for company problems in 1926. All the birds were trained in flights from Wilmington, Delaware, an air line distance of 89.74 miles. "General Pershing" took the Army Championship at Washington, 14 April 1926. He covered the distance to Fort Monmouth in 5 hours and 20 minutes. Birds from the Pigeon Section during the year took 3 silver cups, 8 special ribbons, 24 first prizes, 15 seconds, 10 thirds, 7 fourths, and 8 fifth prizes.

In a mass demonstration before General Saltzman and the members of the General Staff in October 1926, 150 young birds were tossed

up in front of the Munitions Building, Washington, in a driving rain storm. Nine of the yearlings were lost in the flight to Jersey but it was an excellent test of the endurance of the pigeons.

The ability of the birds to fly at night had been the subject of considerable controversy and the Monmouth Pigeon Section undertook extensive experiments in 1928. A trial flight was made on 15 August with four birds. They were taken five miles out of camp and liberated at 10:15 P. M. Two of the birds homed and trapped in ten minutes, the others remaining out until sunrise.

It is interesting to note that Major T. Soda of the Imperial Japanese Army visited the lofts on 1 December 1928 and was shown all the birds except the night flying team. That same evening intensive night training began. Twenty birds were liberated each evening at constantly increasing distances. By February 1929 several pigeons were flying three miles without lights and by March were able to cover four miles in 11 minutes. The night flyers were segregated from birth and at 18 days taken out on the landing board at dusk to survey the surrounding countryside. After several days of this the youngsters were taught to fly. Three weeks of such basic training usually sufficed before the birds were started homing at 200 yards and in full sight of the lofts. Distance was increased nightly until the adults were consistently able to orient themselves and fly home from five miles away.

In June 1929 "President Wilson," another of the war heroes, died. He had flown brilliantly in the St. Mihiel operations and later in the Meuse-Argonne offensive. Under murderous machine gun and artillery fire he was released and flew 25 miles in as many minutes with a shattered leg and a bad breast wound. He was found dead at the age of 11 years, later stuffed, mounted, and placed in the Smithsonian Institute.

Pigeon breeding and training had transcended the novelty stage in 1930. New and revolutionary techniques were establishing the Monmouth birds as probably the outstanding stud in America.

4. Laboratory Progress

Battle experience is the only basis upon which the field radio requirements of an Army can be determined. The type of equipment and the conditions under which it will be used differ so widely from commercial applications that there is no comparison. The design of portable field radio transmitting and receiving equipment is a highly specialized branch of the art. Ordinarily, there is but little commercial demand for such equipment and civilian laboratories and manufacturers are not concerned with the problems inherent in military operations. For these and other reasons, it was considered by the Signal Corps of utmost importance that adequate research facilities be maintained after the War for the design and development of Army communications equipment.

Added advantage of an Army experimental laboratory was the elimination of patent difficulties. If contracts were awarded private

manufacturers, such organizations would not always be willing to cooperate in distributing the drawings and specifications to the trade, which would facilitate the mass production required in wartime emergencies. Government-designed equipment would be free of such complexities and rivalries. Army control would eliminate the need for the submission of samples, required for testing and approval before apparatus can be accepted by the Government. Inspection would be simplified, production of critical military equipment accelerated.

Lastly, the Signal Corps laboratories have always investigated many minor problems of maintenance and repair that could not satisfactorily be handled in any other manner. It would be impracticable to contract with commercial organizations for such purposes.

To fulfill these needs, the Radio Laboratory had been established during the war at Camp Vail. With the coming of peace there was a tendency to minimize the functions of the laboratories, and for some years experiments were at a minimum. However, it was realized that the laboratory was indispensable to the Army and even during the lean years a foundation was being built for the huge organization of later years.

Although overshadowed by the Signal School, the Radio Laboratory remained as one of the most important installations at Fort Monmouth. Research continued, although on a reduced scale, and maximum use was made of the meager budget. Field radio sets were in some degree based upon the famous SCR-77, which had been designed during the War, although not put into quantity production until after 1920. A light, portable set of medium range, this equipment was widely used throughout the Army.

The SCR-136, developed in 1926, was a ground telephone and telegraph set for artillery fire control up to 30 miles. In conjunction with the SCR-134, mounted in observation aircraft, it could furnish air-ground liaison.

Other current projects included the SCR-131, very light and portable, for infantry division and battalion telegraph, weighing 75 pounds and designed for a five mile range to limit enemy interception; the SCR-161 for Artillery nets; the SCR-162 for contact between Coast Artillery boats and shore control points; and the SCR-132, a 100-mile telephone transmitter with an 80-foot portable, collapsible mast. Experimentation was under way on unidirectional receivers, tube testers, crystal controlled oscillators, and nonradiating phantom antennas.

Relatively high-powered fixed station equipment was required for the rapidly developing Army control net, with headquarters at Washington. In 1927 the BC-147 was designed and constructed at the Monmouth laboratories. It was a 500-watt transmitter, crystal controlled, an improvement over the BC-145. Ten of these models were built in the laboratories for use in the stations of the War Department net.

The need for calibration of very close tolerance became more acute as the frequency spectrum became continually more congested. Experiments were being made with high frequency crystal oscillators

to be used as frequency standards, with an accuracy within .001 per cent. This was equal to any equipment then in existence.

Tests were made during 1927 on goniometric and intelligence units. French models were modified for use in joint Army-Navy exercises. Special plotting boards and other apparatus were designed for these problems. Several RCA high-speed ink recorders were purchased and tested. Switchboard units for the installation of a new central office at Fort Benning, Georgia, were designed. The famous and dependable EE-8 field telephone was being tested. Wire carts, breast reels, code practice equipment, all these were among the maze of items developed and improved constantly by the laboratory at Monmouth.

The function of the Laboratory to this point, in 1929, had been primarily to design and test radio sets and some field wire equipment. Plans were formulated in that year to consolidate the wide-spread laboratory facilities of the Signal Corps, then in five separate locations. In the interests of "economy and efficiency," the Signal Corps Electrical Laboratory, the Signal Corps Meteorological Laboratory, and the Signal Corps Laboratory at the Bureau of Standards, all in Washington, were moved to Fort Monmouth where the whole was consolidated as the new "Signal Corps Laboratories." In 1930 the subaqueous Sound Ranging Laboratory, which had been at Fort H. G. Wright, New York, for some years, was also transferred to Monmouth. It was not until then that the Signal Corps laboratories were definitely centralized. Movement of the Signal Corps Aircraft Radio Laboratory from Wright Field, Dayton, Ohio, was considered but subsequently abandoned. This, and the Photographic Laboratory at Fort Humphreys, were the only research organizations remaining unattached to the Fort Monmouth unit.

For the first time the personnel and facilities to handle almost any Signal Corps problem were available at one location. The installations on the Shrewsbury had at last attained full stature.

5. Organizations

The half decade 1925-1930 was a formative period for the two tactical units stationed at Fort Monmouth. Thorough field training was frequently subordinated to the post requirements.

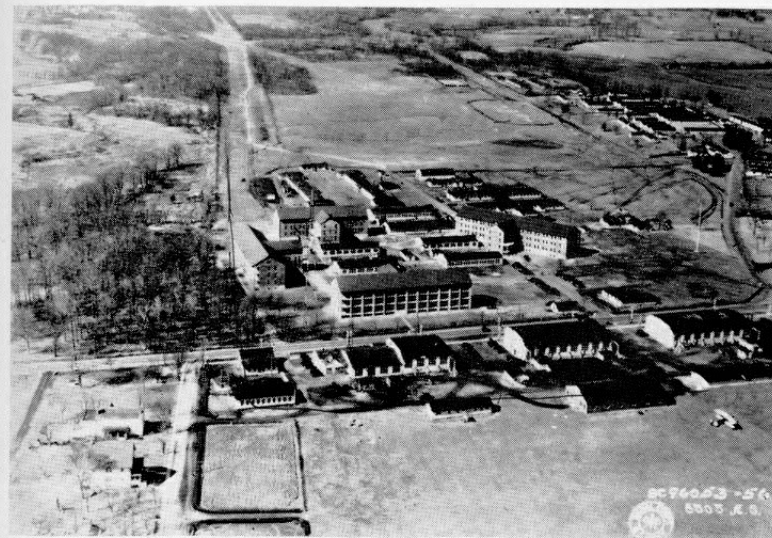
While the 51st Signal Battalion had been designed to function with an army corps, it was not possible to properly instruct the men in the duties that would accompany such operations. Most of the battalion personnel were occupied with garrison duties or replacement training. This situation was necessitated because new men for Signal Service Companies throughout the Army were mostly drawn from battalion recruits. All authorized technical equipment had been issued to the organization but it was kept in storage for some years. Field training could only be sporadic under the conditions.

The 1st Signal Company was carrying out the training required of divisional troops and also participated to a more limited extent in garrison details. Some instructors were furnished for the Signal

School. The company took part in summer maneuvers at Camp Dix, New Jersey, from April until July of 1926.

It is indicative of the heavy requirements of the post that the 15th Signal Service Company was devoting its entire strength to servicing such assignments as the Signal School, Pigeon Section, Radio Laboratory, Photography Section, Meteorological Section, Radio and Telegraph stations, the Officers' Mess, and the post fire department. Nevertheless, it was still necessary to call upon the other units to assist in such details.

The 51st Signal Battalion devoted its main training effort to technical subjects in 1926. Included were radio and telegraph operation, electricity, maintenance, line construction, and meteorology. This in-



Airplane View of Fort Monmouth. The Signal Corps School, 1928.
Note Outlines of the Old Race Track.

struction was again hampered. The 1st Signal Company sent detachments during the year to handle such assignments as the Reserve Officer Training Program at Camp Blauvelt, New York, from July to September; the communications system at the Camp Perry, Ohio, Shooting Matches; and to man Signal equipment exhibits at the World's Radio and New York Electrical Shows.

At various times in 1927 the First Division had units at Camp Dix for training and the Signal Company provided detachments for these operations. In the summer the entire company took part in the divisional communication and staff maneuvers.

Major O. S. Albright commanded the 51st Signal Battalion briefly, from 1 July to 3 August 1927. He was relieved by Major Clyde L.

Eastman, who held command until June 1928. Almost immediately the new commander instituted a program of field training but again this had to be abandoned. The 1st Signal Company went to Camp Dix in May 1928 for 78th Division exercises. While there it rebuilt the telephone system at the Target Range, and installed and operated a radio station and telephone system in the camp.

The Army was becoming increasingly conscious of the possibilities of mechanized warfare at this time and an Experimental Mechanized Force went into extensive maneuvers at Fort Leonard Wood, Maryland, from July to October 1928. The 1st Signal Company was assigned to this Force and left Fort Monmouth on the last day of June for the 110 mile road march. There was much experimentation with motorized equipment during the exercises and the company made numerous road trips from Fort Wood. From a Signal standpoint, the principal conclusions were that radio was the prime means of communications for armored, mobile forces; that wire was useful only in rear areas; that pigeons were impractical because they could not be trained to home to a moving loft. April-June 1929 were occupied in First Division command exercises and rigorous field training at Camp Dix.

The Battalion acquired a new commanding officer in September 1929, Major L. Bender. Training activities were still limited, garrison responsibilities precluding the possibility of practical applicatory work.

In contrast, the Signal Company was as busy as usual, engaging in the Second Corps Area Maneuvers in July 1929 at Camp Dix; the Air Corps Exercises at Aberdeen, Maryland, in the summer of 1930, and the Command Post Exercise of the First Division at Camp Dix. Lt. G. L. Townsend relieved Captain Everett Hill as company commander 23 July 1929.

With the year 1930 the two organizations had settled into a well defined pattern of operation. The 1st Signal Company was functioning in its prescribed role as a division communications unit. Equipment was maintained in excellent condition, while the state of training and morale of the men continued highly satisfactory. Due to the small increment of recruits allowed annually to the Signal Corps, it had been impossible to obtain enough personnel to relieve the 51st Signal Battalion of its many non-technical duties. Until that could be accomplished the organization could not be prepared for field service.

Part IV

PEACETIME TRAINING

1930 - 1939

PART IV

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1. The Signal School in the Lean Years

Firmly established as a military training institution, the Signal School completed its first decade in 1929. Its curricula and training methods had proved their merit in the consistent quality of technicians graduated each year.

The depression years were hard ones for the military establishment. The School, although beset with difficulties including lack of funds, was able to carry on with the task of producing skilled personnel for the Signal Corps.

Colonel Cowan remained as Commandant until 1937 and continued to guide operations with his customary astuteness. Major S. B. Akin relieved Major Van Deusen as Assistant Commandant, 1 July 1929. Captain Jerry V. Matejka was assigned as Director of the Department of Training Literature in 1930. Through the years many of the future high ranking officers of the Corps received valuable training on the staff of the School, or as students.

The Officers' Division expanded steadily. From 1919 to 1933 the regular courses graduated 559 officers. Of these, 202 came from the Signal Corps, 216 were Infantry, 59 Cavalry, 28 Field Artillery, 30 Marines, 7 Philippine Scouts, 7 Coast Artillery, 4 Air Corps, 3 Cubans, 3 Peruvians. During the same period 98 National Guard and 50 Reserve students were graduated from 3-month courses. From 1934-40 a total of 257 officers received diplomas from the Signal Corps School.

More stringent entrance requirements had resulted in a decreasing number of failures by 1932. Only 48 students out of 329 enrolled were relieved because of academic deficiencies. This proportion was a marked improvement over former years.

Beginning in 1933 the Signal Corps experienced an acute shortage of trained personnel who could be used as instructors in the School. The CCC program and the handling of postal air mail by the Army Air Corps accentuated the need for signal services, especially skilled radio operators. These conditions were reflected in the faculty of the School.

Recognizing the need for officers to qualify for the more responsible positions in the Signal Corps, Major Ingles strongly recommended advanced courses for selected students. These were to include such subjects as Equipment Studies, Tactics and Technique of Signal Communications, Auxiliary Signal Services in the Theatre of Operations, Signal Operating Instructions and Orders, Staff Relations, Training Management, War Plans, Expeditionary Forces, Signal Supply, Duties

of Corps Area Signal Officers, Historical Studies, and Field Exercises. Such a comprehensive course was designed to acquaint the more experienced commissioned personnel with the problems confronting the Staff Signal Officer.

1935 was an important year for the School. The Officers' Department was reorganized, the Departments of Communications Engineering and Applied Communications being combined as the "Officers' Department." At the same time the School again became known as the "Signal Corps School," after the lapse of many years. Temporarily, the National Guard and Reserve Officers' courses were increased from 3 to 9 months, and then returned to 3 months' duration.

Not least among the innovations in 1935 was the adoption of a new teaching technique by the Enlisted Department. The class system was abandoned for individual instruction. This would give the abler students a chance to progress faster than those less qualified. The new system was eminently successful in its first year and even more radical departures were made in 1936. As the basis of enlisted training, this method was to prove of tremendous value in the large scale operations required during World War II.

Concurrently, the School was placed on a 12-month basis, with classes entering at various times throughout the year. Thus, with a given number of instructors, it was possible to increase greatly the number of students that could be handled annually.

Congressional legislation in 1935 directly affected Fort Monmouth and the Signal Corps School. The Thomason Act, amending the National Defense Act, authorized the President to call up annually, with their consent, not more than 1,000 Second Lieutenants of the Reserve, for one year's active duty. It also provided that the Secretary of War could, for a 10-year period, annually select 50 of these, in addition to the graduates of the United States Military Academy, to be commissioned in the Regular Army. A number of the Thomason Act officers were trained each year at Fort Monmouth in the 1930's. All were of very high calibre.

The School was again reorganized in October 1936. The Executive Officer was made a member of the School Staff and responsible for administrative details of the school, including the print shop and the book department. The Assistant Commandant was made responsible for instruction and those administrative details pertaining to instruction. This plan was found to be unsatisfactory, and later modified.

In April 1937, after an eight-year tenure, Colonel Cowan was relieved of both the school and post command. His school duties were filled by Col. Alvin C. Voris for ten months, after which Lt. Colonel Van Deusen served as Acting Commandant until Colonel Dawson Olmstead took command in August 1938.

The Enlisted Department Radio Course in 1937 was subdivided into the following: field radio operator, field radio repairman, radio operator, radio repairman, and a special intercept radio operator course. Wire included field telephone electrician, outside plant tele-

phone, inside plant telephone, and teletype maintenance. These courses remained basically unchanged until the outbreak of the War.

All meteorological courses were discontinued in 1937. This activity was transferred to the Air Corps, both students and instructors going to Patterson Field. The Signal Corps, however, remained re-



COL. ARTHUR S. COWAN

Commanding Officer

Camp Alfred Vail (now Fort Monmouth)

16 September 1917 to 28 June 1918.

2 September 1929 to 30 April 1937.

sponsible for the development, procurement, and improvement of meteorological equipment.

A six-month training course designed to furnish replacements to various service companies in the United States and Overseas was organized in the early months of 1937. This move took the pressure

off certain tactical units which had been bearing a large part of the responsibility in the past.

Photographic instruction returned to Fort Monmouth in 1936. Such activities had been carried on at the War College in Washington since 1932 but certain reductions in commissioned personnel forced the return to Jersey. "Training Film Field Unit Number 1," with one officer, two enlisted men, and one civilian, formed the nucleus of the new program, which had a yearly production quota of 20 reels, was turning out 37 by 1940.

Fourteen Thomason Act officers reported in 1937, of whom two were relieved at their own request. The 51st Signal Battalion operated a school for these men in the subjects in which they would be examined for permanent commissions. The examinations were held in the first week of April 1937 and two of the officers were given permanent Signal Corps commissions. The others were relieved from duty with the Army.

The National Defense Act was further amended on 3 April 1939. The President could then, with their consent, order as many reserve Second Lieutenants into active duty for one year as would be necessary to "maintain at all times not more than 1,000 reserve officers," other than Air Corps. The Signal Corps was allotted 341 regular commissions.

Just before the outbreak of the second European War, the Signal Corps School was functioning with three well defined divisions: the Officers' Department, Enlisted Department, and the Department of Training Literature. The faculty consisted of 78 persons, of whom 11 were officers. At the head of each department was a Director who was also the senior instructor. He was responsible to the Assistant Commandant of the School. The Literature Department also had a Director, who reported to the Assistant Commandant. This latter Department prepared extension courses, training and technical manuals, entrance tests, and tests for the promotion of enlisted men to the first three grades.

From 1919 until 1940 the School had an impressive record. The number of enlisted men enrolled was 4,618, of whom 2,443 were Signal Corps, 157 Field Artillery, 595 Infantry, 119 Cavalry, 73 Marines, 35 Coast Artillery, 204 Air Corps, 30 National Guard, six Coast Guard, six Signal Reserve, seven Engineers, two Medical Corps, four Chemical Warfare Service, 105 in the Post School, 466 for the Domestic Replacement Pool, and 366 for the Overseas Replacement Pool.

Begun on a small scale in 1919, the School had grown into a comprehensive training institution. The experience gained during the intervening years would be invaluable in the tremendously expanded program that would be required when the impending holocaust struck home to America.

2. Laboratory Operations

Consolidation of the Laboratories in 1929 marked the beginning of a new era in the development of the Fort Monmouth institution. The

newly named "Signal Corps Laboratories" received a new Director in 1930. Major William R. Blair, distinguished in scientific and military fields, was appointed at that time and retained command until forced by illness to retire in 1938. Much of the equipment used by the forces during the recent war was designed and developed during this period. The laboratories grew to enormous prestige and accomplishment.

Major Blair, commissioned a Major in 1917, served in France as the officer in charge of the Meteorological Section of the AEF, on the technical subcommittee for the Aeronautical Committee of the Peace Conference, and as Chief of the Meteorological Section of the Signal Corps in Washington. He had done important radio experimentation



Preparing to Release Meteorological Balloon, 1923.

before entering the Army and was appointed in charge of the Engineering and Research Division of the Signal Corps in 1926.

Until 1935 there were to be no major physical changes at the Laboratories. Housed in nine wooden buildings which had been built during the war, the facilities and personnel were extremely crowded. There was grave danger of fire because of the age and nature of construction of the buildings.

In 1933 the organization was divided into the Administrative, Specifications and Records, Shop and Power, Supply, Radio, Wire, Light and Sound, and Meteorological Sections.

There was equipment for a complete instrument shop, machine and cabinet shops, with some of the finest precision tools obtainable. Typical jobs handled in 1933 ranged from the cross hairs in a tele-

scope to a 40-foot steel tube, 10 inches in diameter, to be used in sound ranging experiments. There were a foreman, two assistants, and 17 instrument makers and machinists in the shops.

The Radio Section had one civilian radio engineer and 11 radio specialists as assistants. Among the equipment installed were a General Radio standard frequency generator, a Jenkins and Adair plate supply rectifier, Western Electric audio oscillator, RCA microphone response tester, Ferris standard signal generator, RCA plate resistance and mutual inductance meter, and an RCA direct capacitance meter. The section also had a battery bank that could provide up to 2,000 volts direct current for testing and calibration.

Wire employed a group of highly trained civilian engineers, some of whom had been with the laboratories since the war. Experimentation was being conducted on such equipment as the EE-8 field telephone and TG-5 telegraph set. Available were a Leeds and Northrup insulation resistance test set, Western Electric oscillator, Scott compression testing machine, Olsen tensile strength tester, and a Schutte-Koerting oxygen bomb.

The Sound and Light Section staff was also composed of civilian specialists. A water tank, 15 by 10 by 8 feet, for the testing of transmitters and receivers under water, had been installed at Fort Monmouth. Extended subaqueous tests were being conducted at the Coast Guard Station at Sea Bright, New Jersey. This section had a Gaertner wave length spectrometer, Compton electrometer, General Radio attenuation network, Bausch and Lomb spectrograph, Hilger spectro-scope and a Leeds and Northrup high sensitivity galvanometer. A physicist was in charge, with four assistants.

Such field radios as the SCR-177, SCR-193, and the BD-71 and 72 switchboards were being developed as early as 1933. These, with the EE-8 field telephone, were indispensable during the field operations of 1941-1945.

The Economy Act, a retrenchment policy forced by the economic depression, caused the loss of ten employees and payless furloughs for those retained. Such furloughs resulted in the loss of 4700 man hours and the disruption of the operating schedule.

As a result of constant effort by Lt. Colonel Blair, an appropriation of \$220,000 was received in 1934 for the construction of a permanent, fire-proof laboratory building and shops. This structure was built under contract, scheduled for completion on 11 November 1934, but not actually finished and accepted until 1 March 1935.

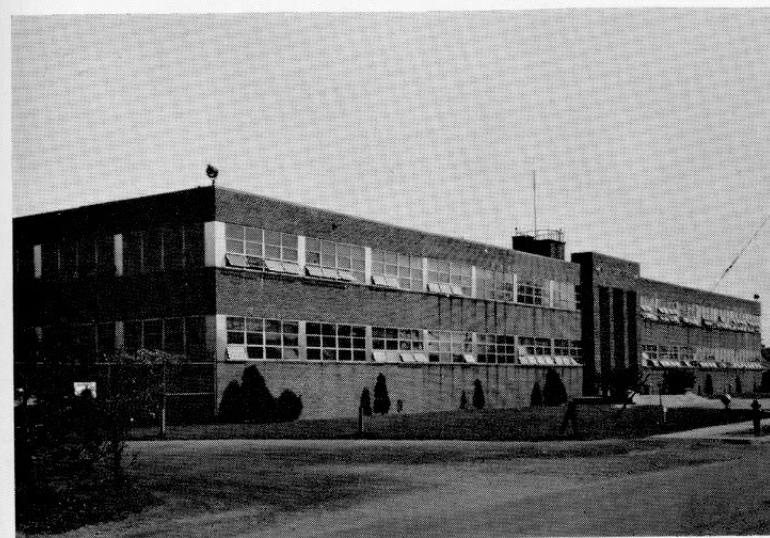
Known as "Squier Laboratory," it honored the Army's Chief Signal Officer from 1917-1923, Major General George O. Squier. The building was in two parts, a two-story Administrative and Laboratory section and a single-story shop building. The laboratory portion had a basement, boiler plant, and experimental light tunnel under the first floor. The building, of brick and reinforced concrete and steel, measured 68 feet by 214 feet; the shop was 64 feet by 200 feet.

Semi-modernistic, there were stainless steel panels between the front windows and an impressive entrance with fluted columns flanking the doorway. Green terrazzo floors, double stairways with wide

bronze handrails, asbestos roof, 4,000 pound elevator, saw-tooth roof on the shop, all contributed to a structure that would at last provide the facilities required by the Laboratories.

In 1936 the several sections were partially installed in the new building. The sectional organization had remained unchanged. There were now six officers, 25 enlisted men, and 83 civilians employed. The services of high grade civilian engineers had been procured and only well qualified officers had been assigned to key positions. This had contributed markedly to the perfecting of laboratory organization and performance.

At this time the SCR-177, 178, 209, 210, 188, and 193 had been completed for field radio work and issued to the using organizations. The SCR-211, a highly efficient frequency measuring instrument, and



Squier Laboratory.

several artillery pack sets were ready for test. A new Air Corps mobile transmitter, the SCR-197, had been developed and was ready for issue. Field Wire W-110, the BD-9, 10, 11, and 14 switchboards were in course of processing.

The need for a radio receiver of high stability, mounted in a single chassis, had long been felt. Long study and experimentation resulted in the development of the BC-312 in 1937. This, with the alternating current counterpart, the BC-342, were the standard units used in World War II.

The Wire Section conducted facsimile transmission tests in 1938. Equipment was loaned by Western Union and messages and maps were transmitted over cable and field wire. Results were satisfactory.

Experiments in the use of high-frequency radio waves in the detection of aircraft and other objects had been under way for some

time at Fort Monmouth. During an inspection by General Malin Craig, Chief of Staff, the security of the operations was criticized and, as a result, new installations were made on Sandy Hook, in the Fort Hancock area, in 1937.

Upon the forced retirement of Colonel Blair in 1938, Lt. Colonel Roger B. Colton was made Director of the Laboratories on 25 June. After many years of constant expansion the laboratories stood upon the threshold of an almost violent functional growth. From the record, they were prepared.

3. Simulating War

War had been relegated to a very secondary position in the American consciousness by 1930. Never a jingoist nation, we were too preoccupied with social and economic maladjustment to admit the need for military preparedness. This condition was reflected in the annual budget. The War Department was allotted such small funds that only a token force could be kept under arms, only drastically curtailed training possible.

Following the World War the Signal Corps had a total of approximately 300 officers and 5000 enlisted personnel. At year's end in 1921 the enlisted strength had dropped to 3000 and there were three signal companies in the Corps, one for each active infantry division. In addition, Panama and Hawaii had one such unit each.

The authorized strength of the Corps remained relatively static down to 1934, when there were 260 commissioned, 2541 enlisted men. The active units were the 51st Signal Battalion and the 1st Signal Company at Fort Monmouth, the 2nd Signal Company at Fort Sam Houston, Texas, the 1st Signal Troop of the First Cavalry Division at Fort Bliss, Texas, and the 11th Signal Company in the Hawaiian Department. An experimental organization, the Panama Signal Company, had been activated in 1932. The 12th Signal Company in the Philippine Department was officered by Signal Corps personnel, but the enlisted men were from the Philippine Scouts.

During the period immediately preceding the industrial displacements of 1929-34, the 1st Signal Company had been able to carry out extensive annual field maneuvers with the First Division and other headquarters. The 51st Signal Battalion, greatly hampered by garrison and replacement duties, was unable to provide practical field problems to supplement academic instruction. This situation had not been rectified during the 1920's and the battalion was in a dangerous state of unpreparedness at the end of the decade.

The Third Corps Area Command Post Exercise in 1930 was essentially a staff training project and the maintenance of reliable communications was indispensable. Having just completed exercises at Aberdeen, Maryland, and the First Division problem at Camp Dix, the 1st Signal Company was attached for that purpose. Arriving on 27

June, the company laid wire from III Corps to five infantry divisions and one cavalry division and one cavalry brigade. All switchboards were handled by the company personnel. Officers and men of the ROTC and CMTC, together with students of the Signal Corps School, were attached to the company for the maneuvers.

Reorganization of the 51st Signal Battalion in 1933 was designed to prepare that unit for field training on a broad scale. Having functioned principally as a reservoir for replacement personnel, there had been no opportunity to train with the equipment available and it had all been returned to the New York General Depot. The battalion was allowed a considerable overstrength, primarily to determine the normal requirements of such an organization. The missions of the new unit were to provide enlisted instructors and overhead for the Signal Corps School, organize and conduct a provisional radio intelligence detachment, and form the nucleus of a GHQ signal service, including a meteorological, photographic, and radio intelligence company. The battalion was to furnish no replacement personnel.

Major P. W. Evans supervised the revamping of the battalion. Most of the additional personnel were transferred from the 15th Signal Service Company at Fort Monmouth. All technical equipment was drawn from the General Depot and preparations made to go into immediate full scale training. No sooner had this ambitious program started than it was completely disrupted by the stringent demands placed upon the battalion by the Civilian Conservation Corps, and the construction of the Fort Monmouth War Department Theater. Personnel could not be sent out as replacements but they could be dispatched on detached service. This is what happened when the CCC requested experienced technicians for their vast program. As many as 20% of the battalion personnel were on detached service, some for as much as nine months. Many never returned. Although no replacements were sent out under the new organization, in many ways the system was even more vicious. The theater was built by men of Fort Monmouth, most of whom came from the battalion. As many as 60 men per day were required. These conditions hampered organized training severely.

By June 1934 the situation had been alleviated and the battalion was able to begin its long delayed field training program. A series of annual maneuvers, beginning in 1934, kept the tactical units of the Signal Corps in the field much of each summer. In 1934 General MacArthur conducted a GHQ command post exercise in New Jersey; First Army maneuvers were held in the vicinity of Pine Camp, New York, in 1935; Second Army maneuvers in the Allegan-Camp Custer, Michigan, and Fort Knox, Kentucky, areas in 1936; the "streamlined" division tests in Texas in 1937; Third Army maneuvers in the Biloxi, Mississippi, region, and the Fort Bragg-Air Corps Exercise, both in 1938; and the 1st Army Exercises in 1939 at Plattsburg Barracks, New York. All these operations involved three or more weeks of line construction and other preparations prior to the arrival of the main forces. Unusually large motor movements were required and the units were away from camp for two to four months each year. As a proving

ground for problems in modern warfare, these maneuvers were of great value to all branches of the Army.

This expanded program began in 1934 with General MacArthur's GHQ Command Post Exercise which centered in the Fort Monmouth-Camp Dix-Raritan Arsenal triangle. The First Army, I, II, and III Corps command posts were at Camp Dix; Second Army, V, VI, and a Provisional Cavalry Corps headquarters at Fort Monmouth. GHQ and Air GHQ were at the arsenal at Raritan, New Jersey.

Signal services for the exercises had been assigned the 51st Signal Battalion, with the 1st Signal Company attached. Nearly four times the available personnel were required to man the scattered message centers at each of the command posts. To meet this need it was necessary to train personnel in a minimum of time. Despite this handicap, 27,269 messages were handled in seven days and only three of them were lost or misdirected, a brilliant record. In addition, radio intelligence, radio, wire, and meteorological functions were handled successfully. Following the conclusion of the exercises, General MacArthur made his critique at the theater at Fort Monmouth, covering all phases of the operation.

The largest Army maneuvers since the war were held in the Pine Camp area of upper New York state in 1935. Commanded by Lt. Colonel Harry C. Ingles, the 51st Signal Battalion installed all communications. Actual operations came under the command of Major Stephen H. Sherrill, who took over on 16 August, just prior to the beginning of the maneuvers and continued in command until 30 June 1938. The Army, Corps, and umpire nets were installed, using 177 miles of bare copper, 126 miles of twisted pair field wire, and 8260 feet of lead-covered, multiple pair overhead cable. Colonel Alvin C. Voris, as Signal Officer, directed the communications, which included radio intelligence work at three different intercept locations.

The Second Army maneuvers in 1936 were in two sections. The V Corps, at Fort Knox, Kentucky, operated independently of VI Corps at the Allegan-Camp Custer, Michigan, area. Signal functions were provided by the 1st Signal Company in Kentucky, the 51st Signal Battalion at Camp Custer.

The Michigan exercises provided a problem in road transportation for the battalion. The 44 available vehicles were barely sufficient to carry the personnel on the 1600-mile round trip. Technical equipment was shipped by rail. It was determined that 125 miles was the maximum distance per day that a 50-vehicle convoy could reasonably cover on a long move. An interval of 75 yards seemed optimum, 28 to 30 miles per hour the most satisfactory speed. Three vehicular, SCR-209 radio sets were used for column control. One was at the point, another in the battalion commander's car at the head of the main body, and the third in the last vehicle. Results were excellent.

Arrived in Michigan, the battalion was called upon to perform the work of three such units. Although almost one-quarter of all personnel, enlisted and commissioned, were inexperienced, the battalion functioned very efficiently. Communications were installed and operated for Second Army, VI Corps, and the umpires. Trouble was ex-

perienced with "whisper" circuits on extended telephone lines and the need for repeater equipment was realized. Loading coils, C-114, were used at one-mile intervals on longer lines, balancing out the excess capacity of twisted pair field wire. Radio was not extensively used.

Meanwhile, operations at Fort Knox were proceeding well. The 1st Signal Company made considerable open wire installation, using commercial facilities where feasible.

Minnesota was the scene of the 1st Signal Company's activities in the summer of 1937. The entire unit went to Camp Ripley, where signal communications were installed, operated, and maintained for a phase of the Fourth Army maneuvers. This assignment followed closely ROTC duties at Camp Custer, Michigan.

On the night of 6-7 May 1937 the commandant, Lakehurst Naval Air Station, called for assistance during the disaster that befell the German dirigible "Hindenburg." The great airship, having just completed a trans-Atlantic flight, mysteriously burst into flames just as it was about to tie up to the mooring mast. Thirty-five persons were killed and many injured as they leaped to safety. A convoy, consisting of 11 officers and 115 enlisted men, left Fort Monmouth at 12:05 A. M., 7 May, and remained at Lakehurst until 2 P. M. of the following day. During this period the troops performed guard duty around the wreck of the airship and at other points designated by the commandant.

During these years great emphasis was being placed on the reorganization and "streamlining" of combat divisions. For the purpose of conducting field tests of the new divisions, extended maneuvers were scheduled for the area around Fort Sam Houston, Texas, in 1937. The 51st Signal Battalion was delegated to handle these exercises. This was an important assignment as the War Department would watch it with great interest. Preparations were begun early in the year.

The road march from Fort Monmouth to San Antonio was the longest motor convoy trip of its size yet undertaken in the history of the U. S. Army and is worthy of close consideration. War conditions were closely simulated on the road march. There were 55 vehicles, 13 officers, and 350 enlisted men, including a medical officer and detachment. Leaving Monmouth 21 July 1937, the convoy reached Fort Sam Houston on 2 August. A stop was made at Memphis, Tennessee, to change oil and to grease the vehicles. The battalion recreation officer had made arrangements in advance to provide sight seeing tours and other diversions for the men en route and morale was high. The column covered 1815 miles, or 103,400 truck miles.

The infantry tests were conducted in three phases—unit, combat team, and divisional. All maneuvers were held in the vicinity of Leon Springs, site of an early Signal Corps camp, and Camp Bullis, Texas. Signal functions were very good and all commanders expressed their high satisfaction. These exercises concluded 13 November and the return trip began.

Adverse weather was encountered almost immediately. The temperature went as low as 18 degrees above zero and the men were

somewhat uncomfortable after the warmth of Texas. Average vehicle mileage on the return trip was 10.53 per hour, compared to 12.70 for the first phase. The difference was attributed to the colder weather and the mechanical condition of the vehicles after their hard usage in the tests.

Total cost of the round trip, \$1249.52, included gasoline, oil, spare parts, telegrams, telephone calls, and all maintenance. This averaged \$0.0105 per vehicle per mile. The longest single day's march was 250 miles; total round trip distance, 3739 miles; total truck miles, 222,688. Fourteen different states and the District of Columbia were crossed.

Major Harry E. Storms took command of the 51st Signal Battalion on 30 June 1938, relieving Major Sherrill. During that summer the unit participated in the Biloxi, Mississippi, maneuvers and the Fort Bragg-Air Corps-Antiaircraft Exercises. The 1st Signal Company worked with the Army War College Command Post Exercise at Washington.

First Army maneuvers in 1939 were again held in New York, where the 1st Signal Company made installations in the Plattsburg area, and received a commendation from Lt. General Hugh Drum for meritorious service. The company gave a demonstration of a divisional signal company in field operation for first-year men at West Point in 1939 and handled the First Division maneuvers at Fort Benning, Georgia, that same year.

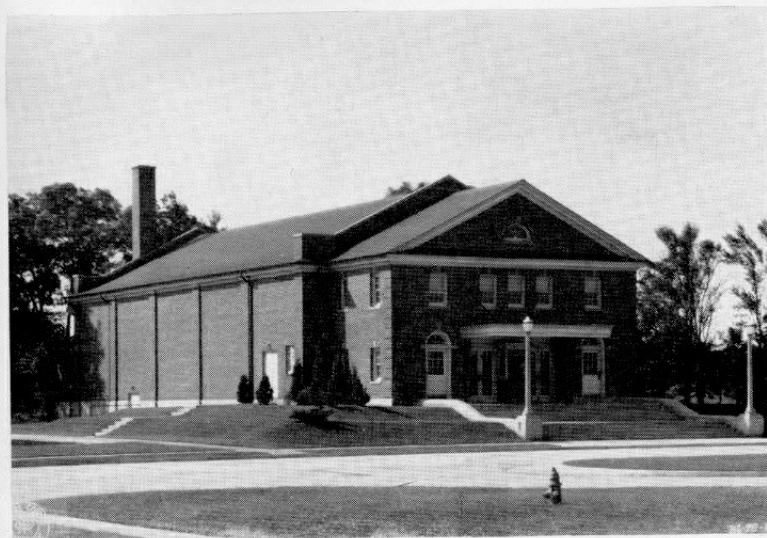
By war's eve the two tactical signal units at Fort Monmouth were admirably prepared, both in training and equipment, for field service. Meeting difficult maneuver problems with deftness and precision, they had demonstrated that the Signal Corps was prepared to meet even the fluid conditions accompanying mechanized warfare. Notable progress had been made in the past decade.

4. Buildings, Birds, and a Band

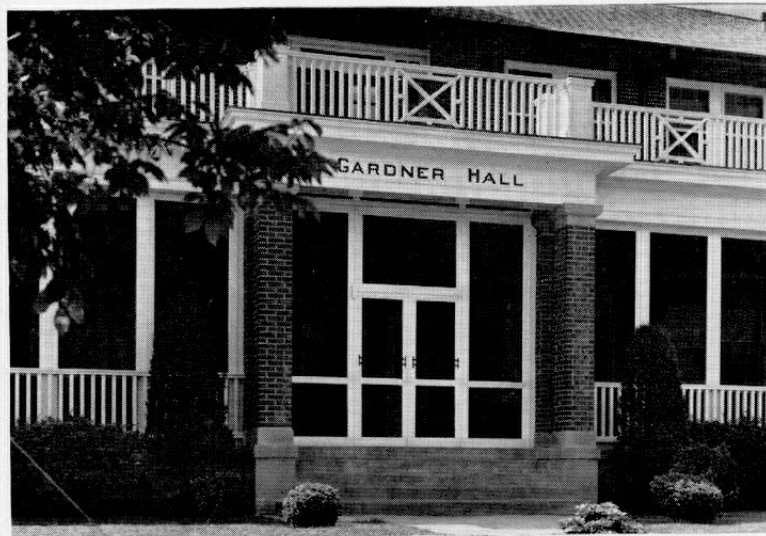
A period of effective progress for the Signal Corps School and Laboratories, 1930-39, was likewise the decade in which Fort Monmouth completed its evolution. During the greater part of this period the post was commanded by Colonel Arthur S. Cowan, whose capable leadership was to bring the Fort to full maturity. From September 1929 until 30 April 1937 Colonel Cowan retained his position as commanding officer. Those years were an era of positive achievement for Fort Monmouth.

Growth was slow and unspectacular but there was general progress during the years. Some permanent construction had been accomplished at Monmouth by 1929 but the greater part of the program was completed from 1932 to 1936.

Major works were the War Department Theater and a headquarters building, known subsequently as "Russel Hall." The theater was authorized in a letter from The Adjutant General's Office, dated 29 September 1932. Funds were provided from the Army Motion Pic-



War Department Theater No. 1



Gardner Hall.

ture Service but labor was not included in the appropriation. The greater part of this consisted of details furnished by garrison organizations.

The theater was built of reinforced concrete and brick with slate roof, a typical architectural treatment adopted at the post. Floors of the lobby and foyer were covered with terrazzo, others with concrete. In the auditorium the aisles and a section of the floor in front of the first row of seats were finished with a sound-absorbent, composition flooring. The walls were of acoustically treated tile and artificial marble. Seating capacity of the new house was 574 persons and the first performance was given on 15 December 1933.

Additions to the post hospital, including an entire new wing, a blacksmith shop, incinerator, bakery, warehouse, band barracks, quartermaster garage, utility shops, and a fire station and guard-house completed the construction program. All the work was authorized by Public Law No. 67, 73rd Congress, 16 June 1933, and included the laboratory and headquarters buildings.

Russel Hall, most imposing structure at Fort Monmouth, is the headquarters building and focal point of post functions. A central, four-storied section is flanked on either side by three-story wings. The whole is built of reinforced concrete, brick, and limestone. The surrounding lawns are terraced so that the front entrance is directly to the first floor, the rear doors opening into the basement. On the longitudinal axis of the post, the building is aligned with the main entrance on Oceanport Avenue.

The central facade is made of limestone and leads up from wide granite steps. On the sides are sculptured panels which depict the Signal Corps in the Civil and World Wars. The four entrance doors are of heavy bronze, the transoms having horizontal bars on which are superimposed the insignia of the Signal Corps and the Signal Corps School. In the center and near the top is a large medallion of carved limestone. It is a modified version of the Great Seal of the United States.

The brick walls are handled in such a manner that the steel windows on the side are set in recesses. Vertically there are ornamental panels made by projecting certain of the bricks. The lobby has a two-tone terrazzo floor and ornamental plaster ceiling. Illumination is furnished by flush mounted frosted glass panels. Completed and accepted by the Government on 3 April 1936, the building is a monument both to the untiring efforts of Colonel Cowan and to General Russel, for whom it is named.

Born in Missouri in 1862, Edgar Russel was commissioned from West Point in 1887. He saw considerable action in the Boxer difficulties in China at the turn of the century. Serving as General Pershing's Chief Signal Officer in France, General Russel was in charge of all military telephone, telegraph, cable, and radio systems. He retired as Major General in 1922.

Recreation is a major concern of military establishments. Morale reflects directly in the efficiency of an organization. Fort Monmouth had early begun a wide program of athletic and social events. Three



Looking Toward Russel Hall from Russel Avenue.



Aerial View of Fort Monmouth, Approximately 1936.

major and seven minor sports were included in the annual curriculum. Expenses were defrayed partially by the Post Exchange Council and by the profits of the Motion Picture Service.

Foremost among the requirements for recreational and entertainment purposes was a band and dance orchestra. Prior to 1930 a volunteer group had been maintained, composed largely of men of the 51st Signal Battalion. The extended absences of this unit in the field made this arrangement very unsatisfactory and Colonel Cowan made repeated efforts to have a permanent organization assigned to the post. This was accomplished on 6 September 1930 when the 13th Cavalry Band, less horses, was transferred to the Signal Corps, and to Fort Monmouth, and became the official Signal Corps Band.

Fort Monmouth had outgrown the embryonic stage by 1936 and had assumed fundamentally its present appearance. The streets were named for personnel distinguished in Signal Corps history. Russel Avenue was obvious in its connotation. Allen Avenue perpetuated the name of Brigadier General James Allen, whose services ranged from the Indian operations in the Old West, through the Spanish-American campaigns in Cuba, Puerto Rico, and Haiti, to the establishment of the Air Service as a component of the Signal Corps prior to the World War.

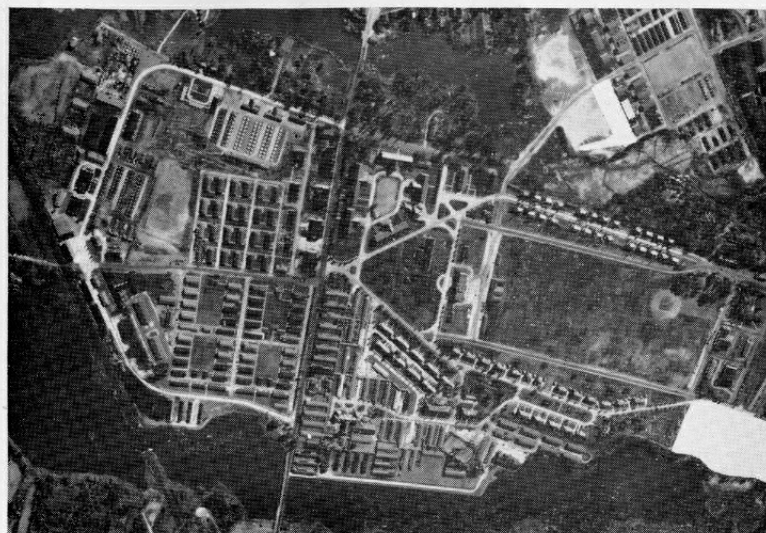
Brigadier General Albert J. Myer, first Chief Signal Officer of the Army, was the father of the Corps and served brilliantly in the Civil War. Originally an Assistant Surgeon, Myer perfected a "wig-wag" system that was adopted by the Army and resulted in his appointment as Chief Signal Officer, 3 March 1863. With a three-year hiatus, he held this post until 24 August 1880. Myer Avenue commemorates a man of outstanding courage, enterprise, and genius.

Carty, Gosselin, and Hildreth Avenues were named for Signal Corps men who contributed outstanding services in the World War.

Pigeon training continued at Monmouth during the decade. Mr. Thomas Ross remained in charge until his death on 10 February 1933. He was accredited with building the Pigeon Section to the status which it occupied at his death. Mr. Robert Milne, civilian expert and Major in the Signal Reserve, had seen service in France and was a recognized authority. Highly qualified for the job, Milne succeeded to Ross' position.

The Chief Signal Officer, representing the Secretary of War, accepted the Hall of Fame Award, a gold medal and certificate of honor, all won by "Always Faithful," a Monmouth pigeon. The awards were given unanimously for the bird's performance in the Chattanooga National Race of 1935 in which she flew the 715.773 miles to the Fort Monmouth lofts at an average speed of 1,341.38 yards per minute.

"Mocker," last of the World War heroes, died at Monmouth in June 1937. With his eye destroyed by a shell splinter and his head a mass of clotted blood, the bird homed in splendid time from the vicinity of Beaumont, France, early on the morning of 12 September 1918. A message of great importance, giving the exact location of



Aerial View of Fort Monmouth, Approximately 1942.



Aerial View of Fort Monmouth, Approximately 1942.

certain heavy enemy batteries, enabled the American artillery to silence these guns in 20 minutes and save countless lives.

Each year the pigeons were entered in many exhibitions and races. Their record of prizes and awards was imposing.

After eight years, Colonel Cowan was relieved as Post Commander in April 1937, becoming Signal Officer of the Second Service Command. He was succeeded by Colonel Alvin C. Voris who, in turn, was relieved by Colonel Dawson Olmstead on 1 August 1938. Colonel Olmstead, war-time Chief Signal Officer, remained at Monmouth until October 1941.

Part V

BEFORE THE STORM

1939 - 1941

PART V
BEFORE THE STORM
1939 - 1941

1. The School Reorganizes

When, in September 1939, German forces crossed the Polish border, the world was precipitated into a general conflict for the second time in a generation. Adolf Hitler, with the genius and temerity of a madman, had used the threat of military power to change the fate of whole peoples. The solemn and binding value of treaties and covenants had ceased to have meaning. Now chicanery would yield to "blitzkrieg," power diplomacy to aerial bombardment.

Repercussions of the European War were not long in reaching America. President Roosevelt proclaimed a state of "limited emergency" on 8 September 1939, increased the Army to 227,000 officers and men. Reaction at Fort Monmouth was almost immediate. The Adjutant General informed the Chief Signal Officer on 7 October that, due to the limited emergency and the expansion and reorganization of the Army, there would be an unprecedented demand for regular Army officers in field units. For this reason, the School Commandant was advised that courses for such personnel could not be continued after 1 February 1940. A sharp increase in the training of National Guard and Reserve officers was also indicated.

Colonel Dawson Olmstead was Commandant of the Signal Corps School during the ensuing period of violent growth. Assisting him was Lt. Colonel Charles M. Milliken. Under their supervision the change to vastly expanded wartime training was effected. The 10-month courses for enlisted personnel were to remain unchanged until 10 July 1940. On that date a drastic revision of the entire curricula was to be instituted. The Commandant was informed that the School would probably be called upon to train 224 officers and 2455 enlisted men to fill vacancies in newly organized units. Also, 75 officers and 1300 men would be required annually as replacements. The extreme conservativeness of these estimates is now evident.

Inadequacy of barracks and school facilities was immediately obvious and new housing for 480 additional men was requested in June. The School was faced with the real problem of increasing capacity to 815 students from a previous maximum of 550. It was recommended in September 1940 that 3-month officer classes be inaugurated and 4-month terms in the Enlisted Department. One-month refresher courses for Regular Army officers were to be substituted for the 9-month period. This was in keeping with the directive of the Secretary of War on 18 June.

The new program for enlisted instruction was effected in July. Radio and wire courses were reduced to three months, the replace-

ment pool fixed at five months for recruits. Short courses included radio operator, radio repairman and telegraph printer operator. The Wire Section was teaching installer-repairman, frameman, powerman, line foreman, cable splicer, wire chief, switchboard installer, and telegraph printer maintenance man. The replacement pool was conducting similar courses in basic radio and wire. The only 10-month subjects were radio and telephone electrician and telegraph printer repairman.

On 16 July, 399 enlisted men were enrolled in the School. The Officers' Department began the new 1-month refresher courses for Regular Army personnel on 1 August 1940. Lasting 175 hours, they included aircraft warning, pigeons, radio communications, radio intelligence, photography, and wire communications.

In 1940, as readjustment got under way, Fort Monmouth was the home station of the Signal Corps School, the laboratories, the Signal Corps Band, the 15th Signal Service Company, 51st Signal Battalion, 1st Signal Company, 1st Radio Intelligence Company, 1st Aircraft Warning Company, and the 1st Signal Operations Company. The last two of these were activated 1 March 1940.

The functions of the School were: technical and tactical training of Regular Army, Reserve, and National Guard officers and enlisted men who were assigned as students; technical training of enlisted men detailed to the School from the service and tactical units on the post; development and standardization of training methods in signal communications for all branches of the Army; and the preparation, editing, and revision of training literature, extension courses, and tests used by the Signal Corps, or two or more other arms or services.

As events in Europe became increasingly graver, the American people grew more cognizant of the need for an adequate national defense. Huge appropriations, \$732,000,000 on 16 May 1940, \$1,000,000,000 on 31 May, had given tremendous impetus to the mobilization of our resources. A Selective Training and Service Act was passed by Congress on 16 September 1940, providing for one-year compulsory military training. The National Guard was simultaneously called into Federal service and the strength of the Army increased to 1,400,000.

At Monmouth new 12-week specialist courses for officers were announced on 14 August 1940. Students would be divided equally between wire and radio. The curricula were quite general and there was a practical elimination of technical instruction.

Lt. Colonel W. O. Reeder, previously School Secretary, was promoted to the post of Assistant Commandant, relieving Colonel Milliken in January 1941. The rapid expansion of the Enlisted Department during 1941 is evident from the enrollment figures. In January 253 men entered the School; 412 in April; 535 in November. Tremendous pressure was put on housing and instructional facilities then available.

The building program which had begun in November 1940, started to furnish some relief in January 1941 when two groups of barracks were ready for occupancy. These were in an area north of the Main Gate, east of Oceanport Avenue, and another southwest of the present

Service Club, designed to house the new Replacement Center. In March additional classrooms were completed for the Enlisted Department. Other projects were the bachelor officers' quarters near the old Officers' Club and an area between Nicodemus Avenue and the railroad tracks. Monmouth's construction was keeping pace with the pressure of growing demands.

In the summer of 1941 the Signal Corps School was training photographers, pigeoneers, and cryptographers, in addition to radio and wiremen. Growth had been rapid after the passage of the Selective Service Act. From December 1940 the capacity had increased first to 500 students per quarter and then, by 15 January 1941, to 800. A change in the procedure of allotting students to the School was announced for 1 February 1941. Thereafter each Army, Corps Area Service Command and the GHQ Air Force would select their personnel for the School on a quota basis.

Colonel Olmstead, soon promoted to Brigadier General, was able to report to the Chief Signal Officer at the end of the fiscal year 1941 that 293 officers and 2146 enlisted men had been trained in the School during that period.

Almost immediately the Enlisted Department curriculum was again revamped, with 14 courses, including nine of 3-months duration and five lasting four months. Replacement pool activities within the school were discontinued due to the operation of the Replacement Center on the post.

Concurrently with these changes, the Officers' Department announced a 3-week basic military training program for the new Electronics Training Group. These officers had been commissioned because of their technical and professional qualifications and most of them were lacking in military fundamentals. The instruction covered all phases of basic training.

General Olmstead was relieved as Commandant on 31 July 1941 and transferred to Washington. On 24 October 1941 he relieved Major General Joseph O. Mauborgne as Chief Signal Officer. Brigadier General Van Deusen then became the School Commandant.

Although the United States was still technically a neutral nation, we had taken a more practical view of the situation and were attempting to bring some order into the chaotic state of our military preparations. Enormous expansion was the keynote in all the armed forces. The Signal Corps School and all other Corps functions were experiencing the most urgent evolution in their long history. Every bit of ingenuity and every resource would be required in the Herculean task of providing skilled communications technicians for a multi-million man army.

2. Replacement Training

Newly invigorated by large scale appropriations and increased troop strength, the Army in the summer of 1940 planned wholesale increase in facilities for the training of recruits. It had been contem-

plated that some form of compulsory peacetime military service would be enacted before winter. In anticipation of this step, the Secretary of War notified the Chief Signal Officer to prepare for the training of Signal Corps personnel for the vastly expanded military establishment.

General Mauborgne, Chief Signal Officer, informed the School Commandant on 12 August that . . . "it is planned to activate at Fort Monmouth an Enlisted Replacement Center, to be available by 15 March 1941. All installations and buildings to be completed by 1 April 1941. . . . The enlisted personnel of the Replacement Center will remain in training for one year. In the event that the reservation at Fort Monmouth is inadequate to care for the troops listed above it is desired that you ascertain without publicity the feasibility of leasing additional ground in the vicinity of Fort Monmouth in order that the above program may be carried out."

As originally scheduled, 1000 selectees would arrive for training on 15 April 1941 and 1000 thereafter on the 1st and 15th of each month until June 1941. The total capacity was placed at 5000 trainees.

Plans were made in September for the technical instruction of the new personnel. It was expected that the Replacement Center would train 1600 linemen, 1000 radio operators, 200 telephone switchboard operators, 580 message center clerks and messengers, 320 teletype printer operators, 100 pigeoneers, 70 photographers, 100 supply and general clerks, 170 automobile mechanics, and 150 cooks. The specialist classes at the Signal Corps School were to instruct 200 radio electricians, 100 radio operators, 50 cable splicers, 20 framemen, 20 insidemen, 200 installer-repairmen, 40 switchboard operators, 30 telephone and telegraph powermen, and 50 telegraph printer maintenance men. This was a total of 710 additional students for the School, all of whom would come from Replacement Center Personnel.

A training staff to handle 5000 selectees was part of the original plan. It was estimated that 146 officers, 1340 enlisted men, and 12 civilian clerks would be the minimum staff required. The training cadre was to come from tactical and service units assigned to Fort Monmouth.

Colonel Olmstead recommended the purchase of three areas contiguous to the Fort to provide for expected expansion. Said the Commandant: "The garrison of this reservation, including the Replacement Center, will total approximately 250 officers and 10,074 enlisted men. The present area is approximately 440 acres, which is insufficient to house this garrison and provide anything like adequate space for training."

A proposed Table of Organization was submitted on 23 October, providing for five battalions with 25 companies. The Adjutant General announced in late October that the Replacement Center at Monmouth would remain under direct War Department supervision instead of Corps Area command. In December the capacity of the school was raised to 7000 men and the training period, originally set at one year, reduced to 13 weeks. Two additional companies were planned

to accomodate the added personnel. Cadremen were directed to report for duty on 6 January 1941. The first operational date had been advanced from 15 March to 15 January.

Colonel G. L. Van Deusen was designated commanding officer of the Replacement Center, activation of which was accomplished by General Order No. 11, Headquarters, Fort Monmouth, 14 January 1941. This order also initiated the five battalions comprising the active units.

The first selectees began to arrive on 27 February 1941. Overhead personnel and equipment were incomplete and facilities were congested. More than 1300 men reported during the next three days and formal training began 1 March 1941.

The schedule called for the recruit to undergo basic training at the Replacement Center after which he was either enrolled in one of the simpler courses at the Center, or sent to the Signal Corps School for more advanced specialist instruction. The first group concluded their training at the Center on 2 June 1941 and most were dispatched to units throughout the country as replacements.

The basic training curriculum of the Replacement Center entailed 144 hours. Instruction included: Articles of War; Regulations and Discipline; Military Courts; Sex Hygiene; Hygiene and Sanitation; First Aid; Equipment, Clothing and Tent Pitching; Interior Guard Duty; Defense Against Chemical Warfare; Basic Signal Communications; Inspections; Dismounted Drill; Physical Training; Pistol Marksmanship. By 1 July 1941, the Center, in addition to basic subjects, had trained 1806 men as automobile mechanics, clerks, code clerks, cooks, linemen, messengers, message center clerks, telegraph printer operators, and telephone switchboard operators.

Colonel Van Deusen was promoted to Brigadier General on 20 April 1941. He retained his post as Commandant of the Replacement Center until November, when he was relieved by Colonel Milliken, who was also promoted soon after. In view of the increasing expansion of Fort Monmouth, General Van Deusen proposed the purchase of an area within 1½ miles of the post. This site, now Camp Charles Wood, was considered ideal for replacement training activities for as many as 7000 men. Adequate space was available for all necessary buildings and a maneuver area.

Growth of the new Aircraft Warning Department at Fort Monmouth forced a reduction in capacity of the Replacement Center from 5000 to 4000 in October 1941. Despite this, the actual student strength exceeded 6000 by the time of Pearl Harbor. Progress was marked despite the fact that changes in planning had to be made almost daily. Little organization could be maintained in long-term preparations because of the fluidity of War Department operations just prior to our entry into the War.

As America was about to be plunged into a second World War, the Signal Corps had embarked upon a comprehensive program of recruit training. The Replacement Center was to perform a fundamental task in the general scheme of Army expansion. Its graduates

were to serve with every type of Signal Corps unit, in every theater of operations. Their record would be truly impressive.

3. Aircraft Detection and Experimentation

Detection of aircraft by radio was one of the four or five truly decisive weapons of World War II, one of the devices that contributed so heavily to final victory. Accompanied by a touch of the bizarre, a trace of comic opera, and years of hard work and sweat, "radar" was long a high priority project in the Signal Corps Laboratories.

Inconclusive experiments in the use of sound, heat and electromagnetic waves had been carried on for some years. Colonel Blair, Director of the Laboratories from 1930 until 1938, was responsible for much of the early interest in the project. He had early become familiar with the sound locator systems used by the Army Artillery. When in June 1926 he was assigned in charge of the Research and Engineering Division of the Office of the Chief Signal Officer, Blair reported on the inadequacy of sound detection against speedy aircraft. As a result he was called before a meeting of the technical committees of the Ordnance Department and the Coast Artillery Corps. There he strongly urged the immediate allocation of funds for experimentation in detection through heat or high frequency radio waves.

Appointed Director of the Signal Corps Laboratories in 1931, aircraft detection became Colonel Blair's direct responsibility. Thermal and radio position finding equipment was installed at Sandy Hook, Sea Bright, and Navesink Lighthouse, all in New Jersey.

After 1935 it was definitely established that the most effective means was the use of a high-frequency radio pulse or beam. It had been shown that such waves, instead of bending around metallic objects, are dispersed and reflected by them. With the use of suitable receiving apparatus, the position, speed and direction of the object could then be ascertained. This basic discovery has been the foundation for aircraft tracking, searchlight and gun control, the detection of surface vessels, radar equipment for aircraft, and laterally, as a means of bombing through clouds or haze.

Preceding certain tests at Navesink Lighthouse, a warning for mariners was published in local newspapers. This read: "A searchlight will be used for experimental purposes at Navesink Lighthouse intermittently between 9 P. M. and 12 P. M. for several nights during the period between July 30 and August 9, 1935. The searchlight will be used principally over an area extending some four miles south-eastward from Scotland Lightship."

The neighboring press seized upon this routine notice with avidity. Resorting to unfounded sensationalism, the Long Branch "Record" headlines proclaimed:

"Ray Which Detects Ships Off Shore to Be Tested Secretly at Highlands."

Even the archly-conservative New York "Times" reported: "Mystery Ray Sees 'Enemy' at 50 Miles."

International repercussions followed almost immediately. A communication was received on the letterhead of Okura & Company, 30

Church Street, New York, Main Office at Tokyo, Japan. With almost bland naivete the Japanese said:

"We are very much interested in the Mystery Ray device described on page 29 of the October 1935 issue of Popular Science Monthly which, we understand, you have developed. We shall, therefore, appreciate it very much if you will kindly send us at your earliest convenience any further information regarding the Mystery Ray that you can."

Replying for the Signal Corps, Lt. Colonel, now Major General, Roger B. Colton said succinctly:

"I regret to inform you that no information of the kind requested by you can be furnished."

Radar, and a welter of other projects, soon caused the Laboratories to outgrow even the new Squier building. In January 1939 development projects numbered 160; there were 116 for improvement and refinement of standard equipment; 44 were miscellaneous assignments. The extraordinary growth caused by the highly accelerated national defense program forced the addition of new facilities. Three Field Laboratories, one near Red Bank, another at Eatontown, and a third on the coast near Belmar, New Jersey, were completed and operational in 1939. Plans were being made for the further expansion of the physical properties.

At the end of the fiscal year 1940 the personnel of the Laboratories had increased to eight commissioned officers, 15 enlisted men, and 234 civilians. The following 12-month period saw a five-fold increase in the staff, and construction of a west wing for Squier Laboratory and two adjoining temporary buildings. As of 30 June 1941 there were 1227 civilians employed. Colonel Roger B. Colton was Director of the Signal Corps Laboratories.

Meantime, such progress had been made in radar experiments that the War Department Bureau of Public Relations, on 29 June 1941, handed a historic release to the press.

"Electrical sentries, armed with radio beams that will 'call out the guard' upon the approach of enemy bombers, will soon be on defense duty 24 hours a day all along the American coastline and at Overseas Bases, the War Department announced today.

"Developed entirely independently by the Signal Corps radio engineers at the Signal Corps Laboratories, Fort Monmouth, New Jersey, over a period of about six years, the U. S. Army detectors of aircraft have heretofore been classified as secret.

"Details of construction and operation of the detectors are still as closely guarded as those of the Air Corps' famed bomb sight. Signal Corps Officers, however, said the equipment operates on the same basic principle used by the British in their defense against enemy bomber raids.

"Without revealing how the equipment works, these officers say that it 'spots' an invading aircraft many miles distant, determining its

altitude, direction, and distance. Using this information, interceptor planes can rise to attack.

"As part of the expansion program for aircraft warning units, the Army has called for 500 volunteers from the fields of radio engineering and electronics to learn to operate the devices and man the detector posts. Qualified experts will be commissioned Second Lieutenants in the Signal Corps Reserve and ordered to immediate active duty."

Early radar equipment was developed in the Signal Corps Laboratories for use by the Coast Artillery. In 1937 a detachment from that Corps received training in the laboratories on an experimental radio detector. With the development of the SCR-268, Signal Corps officers worked closely with the Coast Artillery in establishing a school for that branch at Fort Monroe, Virginia. Long range detectors of the SCR-270 and -271 types resulted in the establishment of the Aircraft Warning Service and it became the responsibility of the Chief Signal Officer to provide the operating personnel, in addition to the equipment.

In February 1941 authority was requested to erect a new building and activate an Aircraft Warning Department in the Signal Corps School. A Board of Officers in March made the original recommendation to establish such training facilities at Fort Monmouth.

The Board advised the inauguration of such a school in two sections, Maintenance and Operation. Of these, only the former would function immediately, pending further consideration of operational procedure. Maximum student strength was placed at 100 until room could be made available.

Although the new school did not begin formal operations until June 1941, a short course was held in the Radio Division of the Signal Corps School on the operation and maintenance of radar equipment. Five enlisted men completed this first class in April 1941.

Activated 2 June 1941, the Aircraft Warning Department of the School was directed by Major James W. Green, Jr. Three classes, each of four months' duration, for training maintenance men, were to commence on 1 July 1941. Personnel was limited initially to 10 officers and 40 enlisted men. Equipment consisted of three SCR-270's and two SCR-268's.

Almost immediately plans were made to increase the capacity of the second of these classes to 20 officers and 80 enlisted men. It was proposed to double the size of each succeeding group. A letter on 30 June from the Chief Signal Officer directed that student capacity should ultimately be increased to 400.

As an indication of the immense growth of the Department, the Secretary of War advised that it would be necessary to train 400 maintenance men and chief operators quarterly, even before a 400-man school could be provided. Accordingly, in October 1941, the Chief Signal Officer suggested that capacity be raised to 900 students,

500 of whom would be trained in the Enlisted Department, 400 in the Aircraft Warning Department.

The Battle of Britain had forcefully demonstrated the need for control of the air in the new warfare. Without adequate warning and protection against enemy bomber fleets, the industrial and military resources of a nation might well be blown to pieces before they could ever be developed for battle. As we went to war, the Signal Corps was desperately engaged in developing the equipment and training the personnel to counteract the Japanese Imperial Air Force and the German Luftwaffe, keynotes in the Axis scheme of conquest.

Part VI

WAR RETURNS TO JERSEY

1941 - 1945

PART VI

WAR RETURNS TO JERSEY

1941 - 1945

1. Replacements

Japanese bombs on Pearl Harbor catapulted the United States into the War in a cascade of fire and broken ships. Never since the Revolution had America been so close to ignominious military defeat; never had our sovereignty been so jeopardized.

The months following 7 December 1941 were dark days of almost constant reverse. Carried on the impetus of initial surprise, the Japanese flood tide washed over the Philippines, the East Indies, Malaya, Burma, Wake, Guam, the Pacific isles. We were on the brink of utter disaster.

Given some respite by the victory at Midway, we were able to marshal our forces, regroup our scattered strength. Slowly, painfully, and always subordinate to the main show in Africa and Europe, the American navy and army began the road back in the Pacific. Marines fought desperately to regain Guadalcanal, expel the Jap from his outer perimeter in the Solomons. Port Moresby was held, the Owen Stanleys recrossed. Buna Mission, Salamaua, Finschafen, Hollandia became bloody milestones on the long way up from the edge of ruin.

We had averted defeat by the narrowest of margins. But the winning of the war, in Europe and Asia, presented a tremendous task that would tax the full material and spiritual resources of all free peoples. To convert the early tragedies into complete victory would require a supreme effort. To this task America bent, almost before the smoke of Jap bombs had lifted from Diamond Head and Molokai.

Even before our formal entry into war, Fort Monmouth had literally cleared the decks for an all-out training effort. In the first of such moves, all tactical units had left the post. On 17 January 1941 the 1st Signal Company, after 19 years, departed to join the First Division at Fort Devens, Massachusetts. Subsequent history of the company in World War II led through the North African invasion at Oran, the desperately bloody fight for Tunisia, the amphibious operations in Sicily, the Normandy landings, and finally the frenzied race across France into the southern redoubt of a beaten Germany.

The 51st Signal Battalion was transferred to Fort Dix, New Jersey, on 7 April 1941 by Special Order No. 81, Fort Monmouth. Landing in Casablanca, French Morocco, in November 1942, the battalion joined the Fifth Army at Oujda, Morocco; went to Bizerte, in Tunisia; participated in the whirlwind Sicilian campaign; then covered every rough mile of Italy's Appenines in support of General Mark Clark's forces.

It was a far cry from the banks of the Shrewsbury to the Tiber and the Po.

In December 1941 the Replacement Center at Fort Monmouth had already trained nearly 13,000 enlisted specialists. Capacity had increased to 6000 but entry into war would soon dwarf these figures. Anticipating a wholesale increase in replacement training requirements and the rapid saturation of Fort Monmouth, General Olmstead proposed the leasing of the New Jersey State National Guard Encampment at Sea Girt:

"Information . . . indicates the entire facilities of Sea Girt can be obtained on lease for \$1.00 per year, plus \$125 per day for power, gas, and water. The encampment now has 22 mess halls capable of feeding 1700 men, latrines, a small laundry, a small post exchange, a large headquarters building . . . and concrete tent floors on which may be constructed the major portion of the temporary buildings. This facility will accommodate 2500 trainees of the Signal Corps replacement Training Center and because of its extensive drill ground, target range and railroad sidings, is ideally equipped to permit the reception of selectees. . . . Upon completion of three weeks' basic training at Sea Girt, the selectees would be transferred to the main Replacement Training Center at Fort Monmouth by motor transportation to continue their specialist training."

Colonel Frank Stoner became the Commandant of the Replacement Training Center in January when General Milliken was transferred to Washington. In a move designed to increase training capacity without physical extension, the training cycle of certain courses was reduced from the previous 15-week period. Twelve specialist classifications would be trained in the Enlisted Department of the School in the future.

The Replacement Center again changed commanders on 27 February when Colonel Edgar Clewell succeeded to the position. Shortly thereafter the authorized capacity was fixed at 6007. This merely legalized a fait accompli. For some time the Center had been accommodating far more than the previously effective 5007 strength.

Some of the pressure on the distended facilities at Fort Monmouth was relieved on 4 April when the 1st Signal Training Battalion moved to the new camp at Sea Girt. On 25 April 1942 it was officially designated Camp Edison, for Charles Edison, the Governor of New Jersey and son of the famed inventor. On the post itself further buildings were made available when Area "E" was finished in February; Area "M", southwest of Oceanport Creek, was ready in March, and Area "D", in the extreme southern portion of the camp, was completed in April.

The record of the Signal Corps Replacement Training Center stood at 20,975 selectees received and trained at the end of February 1942. Trainees in March numbered 5400, of whom 1270 were receiving basic instruction. War brought such a whirlwind increase in demand for trained Signal specialists that it soon became patent that Fort Monmouth and sub-posts would be unable to handle the veritable flood of new recruits. Accordingly, plans were formulated to provide

two new Signal Corps Training Centers: the Midwestern near Neosho, Missouri, and a Pacific Coast installation in the vicinity of Sacramento, California.

The exodus to Camp Edison increased in May 1942 and the Training Battalion located there grew to eight full companies, plus a headquarters detachment. Wire classes had been using an area near the Monmouth Country Club for instruction in pole line construction and in April it was decided to transfer all Replacement Center activities remaining at Monmouth to that site. Construction began almost immediately and 60 Barracks, eight mess halls, 19 school buildings, 10 administration buildings, a recreation hall, post exchange, infirmary, and chapel were ready for occupancy within 90 days. First movement to the new area was made on 16 May 1942 and it was planned to install all three training battalions there.

The total of inductees received had increased to 28,934 as of 10 June. At this time 7172 were in training, including the 1980 at Camp Edison. In the middle of 1942 the Replacement Training Center was in operation at all three posts, but the swollen Monmouth area was fast being vacated as construction proceeded at the Eatontown site.

At the end of the fiscal year 1942, the training operations at the Replacement Center had been channelized into a well defined pattern. Instruction was given by five specialist divisions, the Basic Training Section at Camp Edison, an Instructor's Training Course, and a Basic Wire Course for men of substandard mentality. The subjects taught in the Specialist Division were Signal communications, motor vehicles, drill, and physical training, clerk, and mess specialist. Men in 15 other classifications were attending the Signal School. Included were cable splicer, fixed station radio operator, installer-repairman, powerman, radio repairman, switchboard installer, telegraph printer maintenance man, wire chief, central office repairman, cryptanalyst, line foreman, field radio operator, tool room keeper. The Aircraft Warning Department was training 131 oscilloscope operators for the Center. The enlisted cadre totaled 1157 and the commissioned strength was 251 at this time.

An innovation in the mental conditioning of troops was introduced in the summer of 1942. A Mental Hygiene Unit was organized to provide psychiatric counsel for the trainees of the Replacement Center. Recruits were frequently found to be in a state of mental and emotional unrest as the result of the strange new Army environment. Behavior patterns were studied closely and results of treatment were highly satisfactory.

Simultaneously with other operations, two noncontiguous field training areas were acquired. Near the communities of Allaire and Hamilton, both were in the beach district. These wooded tracts were extensively utilized in field bivouac and maneuver problems.

The new Eatontown post was officially dedicated on 14 July 1942. In the presence of General Van Deusen and Colonel Clewell, it was designated Camp Charles Wood. Lt. Colonel Charles Wood had been assistant executive officer of Fort Monmouth, had died suddenly while

on temporary duty at Washington. His career had begun in 1918 and he had returned from retirement to active duty during World War II.

A new flood tide in replacement training was reached on 10 July when 8084 recruits were under instruction. The highest monthly period was June, when 2688 men completed their training at the several posts. Lt. Colonel James R. Philbrook became commandant of Camp Edison on 20 July; Colonel Clewell, commanding the entire Replacement Center, was promoted to Brigadier General on 1 August.

Adding a fresh note to the otherwise drab basic military program, the Training Standards and Services Division of the Center introduced a tabloid training manual in August. This profusely illustrated booklet covered the 14 basic subjects. Drawings were in cartoon style and were by a former Walt Disney artist.

Further consolidation of recruit training was made on 30 November 1942. Basic training became a unit function and the Nonspecialist Division became an advanced Basic Training Division. It was divided into Administration, Weapons, and Combat Sections.

Personnel of the Army Air Forces had been sent to Fort Monmouth for communications training for many months. By December their quota had become so large that the Chief Signal Officer asked for a reduction in the weekly increments being sent from Reception Centers. This figure dropped at first to 500, eventually went as low as 57.

The Allaire and Hamilton field bivouac areas were developed during the fall and winter months and were in continuous use. Hasty field fortifications, camouflage, a combat course, and a battle-conditioning program were included in the rigorous schedule.

By Spring of 1943 the recruit underwent a program that began with three weeks of basic training at Camp Edison, four days of field operations at Allaire or Hamilton, and culminated in an overnight march to Camp Wood for final specialist training.

The replacement training facilities in the Monmouth area were designated the Eastern Signal Corps Replacement Training Center in March. This was to prevent confusion with the two other such Signal Corps posts at Camp Crowder, Missouri, and Camp Kohler, California.

A year and a half after Pearl Harbor, replacement training had been developed into a precision process at Fort Monmouth. An experienced and seasoned staff was handling a peak flow of recruits with speed and efficiency. But just as activities reached their zenith, a letter from The Adjutant General indicated that a rapid decline in further operations could be anticipated.

Inactivation came almost as rapidly as had the inception of recruit training. Reductions commenced in May 1943. Camp Edison was ordered inactivated in July but this was later countermanded and the area made a Class IV installation. The last full-scale training program began 24 July. A casual platoon of 50 men remained at the seaside camp until 31 July 1943, when activities finally ceased. Brigadier General Clewell was replaced on 17 July by Colonel Car-

roll O. Bickelhaupt, who later commanded the new Unit Training Center.

As the Eastern Signal Corps Replacement Training Center entered its last stage, the record was a proud one. A total of 23,967 troops and 1335 Air Force personnel had been given basic and specialist training during the final year alone. For the entire 30 months of its existence, the Replacement Center had produced more than 60,000 Signal Corps specialists. The enlisted cadre peak was 1157, with 250 officers and 105 civilians.

Special Order No. 30, Headquarters, Eastern Signal Corps Training Center, 10 August 1943, inactivated the Replacement Training Center, concurrently activating the new Unit Training Center. Part of this order was revoked on 25 September and the replacement activities continued on a greatly reduced scale. The final coup de grace was reserved until November 1943.

2. Officer Candidates

Leadership is a prerequisite in the successful prosecution of war. Military operations require split-second decisions that must be derived from a solid foundation of cogent reasoning to insure satisfactory completion of a mission.

Although the non-commissioned officer is a vital link in the chain of command, it is equally important that an Army have qualified and well trained commissioned personnel to implement the operational plans.

The unprecedented size of the new Army following the passage of the Selective Service Act would require an unusually large number of commissioned officers and it was early recognized that the training of suitable personnel would be a task of high priority. Looking to the procurement of some thousands of new lieutenants in the first year, the preparatory work on an officer candidate school was begun in April 1941 when a group of officers in the Signal Corps School at Fort Monmouth prepared a series of course outlines for a suggested curriculum. This work was under the supervision of Captain Charles F. Olin, assisted by 1st Lt. William B. Latta. The Officer Candidate Department of the School was officially activated on 2 June 1941, with Major George L. Richon's appointment as Director.

Planned as a three-month course, the first class began 3 July 1941 with 490 candidates reporting. Of these, 52 were denied admittance and reclassified. The remaining 438 were divided into 12 academic sections for instructional purposes.

The brick barracks previously occupied by the 1st Signal Company and the 51st Signal Battalion became the original home of the new Officer Candidate Department. The curriculum of the first class was rather general and included physical training; dismounted drill; military law; military sanitation and first aid; military courtesy and customs of the service; interior guard duty; equipment, clothing, and shelter tents; defense against chemical attack; pistol marksmanship;

signal supply; administration; mess management; map reading; organization, tactics, and signal communications; motor transportation; inspections; training methods; orientation.

A recommendation for an extensive reorganization of the Department was submitted by Major Richon to the Assistant Commandant of the School on 4 August. It was proposed that the course be divided into junior and senior periods of instruction, each of six weeks' duration. These periods would then be segregated into eight sections of approximately 30 candidates each. Finally, it was suggested that the students in the Department be attached for administration, quarters, and rations to two lettered companies of the 15th Signal Service Battalion.

The first "casualties" occurred on 14 August 1941 when Major Richon reported that 42 candidates had been dropped. They were relieved either at their own request or reclassified by a faculty board. The student strength at that time was 396.

Graduation exercises for the first class were held on 30 September 1941. On that date 335 new Second Lieutenants were commissioned in the Signal Corps, Army of the United States. After a short delay, Class 2 entered on 10 October, consisting of 250 candidates. The third class, 248 strong, reported while Class 2 had just half completed the course, on 26 November. As of 31 December 1941, a total of 434 candidates were in training in the Officer Candidate Department of the School.

While the authorized strength of the first three classes had been set at 250, this was increased to 500 for Class 4 in January 1942. Meanwhile, the 173 survivors of Class 2 were commissioned on 9 January. It was apparent that the caliber of candidates admitted to the school would have to be materially raised if the percentage of failures was to be reduced. The entrance requirements restricted matriculation to four classifications: college graduates of engineering courses; college graduates of other courses; men who had completed more than one year of college; and, finally, those who had graduated from high school.

Continuing increase in the demand for officers due to the rapid activation of new Signal Corps units necessitated a new quota of 750 entrants in March. Finding enough qualified personnel meant lowering the rather high requirements. Consequently, the standards were revised downward and it was only necessary that a man have four months' service if he came from a replacement center, or six months' service if he had received his basic training elsewhere. In addition, he had to have a minimum Army General Classification Test score of 110 plus a combination of academic, trade, or correspondence school training and practical experience in civil life, or the Army, which would reasonably assure his satisfactory completion of the course.

A complete and drastic revision of the entire curriculum was effected for Class 5, which began 5 March 1942. At least one course had been changed in each of the preceding four classes and new courses in electricity and mathematics had been started in January, but the new changes affected every phase of instruction. The junior

and senior periods were abolished, and the term divided into three instructional periods: basic, intermediate, and advanced. Student capacity was boosted to 1000 in April and a record high of 1021 candidates reported for Class 6 on 20 April, 862 of whom graduated on 13 July. The staff and faculty at this time totaled 101 officers and two warrant officers.

As Army inductions became heavier throughout the country, the tempo of officer candidate training increased proportionately. Class and Department quotas multiplied almost daily. The interval between classes was cut to two weeks in August when 1100 men reported for Class 7.

The Signal Corps, basically a technical service, had set a high standard for commissioned personnel. The Chief Signal Officer, in April 1942, had expressed the desire that all officers be basically signal communications specialists, 5000 of whom must be procured during the calendar year 1942. This placed a heavy burden upon the Officer Candidate School.

Breaking down the candidates of Classes 5 and 6, the Commandant replied that only 2.55% of these held degrees in electrical engineering or electronic physics; nearly 21% had specialist training or experience in communications or allied fields. Men without college training and no communication or electrical experience numbered 53% of the total.

As the Officer Candidate Department passed its first anniversary in June 1942, the enrollment exceeded 4000. The Department had graduated and commissioned 1643 candidates in the first year and, at the end of the fiscal year 1942, had an enrollment of 3455. The overhead consisted of 221 commissioned instructors and staff members, 46 enlisted assistants, and 36 civilian employees. In addition to the brick buildings, use was being made of the barracks area formerly occupied by the Replacement Training Center.

Field exercises were added to the program in August. These allowed the candidates to gain practical experience that might otherwise be lacking. A signal company supporting an infantry division was simulated and the 16-hour exercise offered training in message center and messenger procedure, wire construction, and radio and wire communication. Command posts were established for the forward and rear echelons of a division headquarters and three combat teams. The candidates moved from one to another, alternating duties among the four phases of communications.

Reorganization of the training program for Class 11 was the last revision for almost a year and the curriculum remained practically unchanged until the inauguration of the four-month training cycle. Additional field work was added including a night compass exercise in the basic period. Two 8-hour communications field problems were introduced into the intermediate semester.

The Signal Corps School was redesignated Eastern Signal Corps School on 20 June 1942. As such, it included a department for the training of officer candidates, which was renamed Officer Candidate

School. Lt. Colonel Richon was named Assistant Commandant of the School and Director of the Officer Candidate section. The organization of that division was left fundamentally unchanged.

All training functions at Fort Monmouth were consolidated in early November 1942. As the Eastern Signal Corps Training Center, the new organization was commanded by Brigadier General George L. Van Deusen. Colonel William O. Reeder assumed command of the Eastern Signal Corps School and Colonel Richon retained charge of officer candidate activities.

In the Fall of 1942 an average of over 2200 new candidates were entering the School each month. A considerable percentage of these were not communications specialists and their qualifications were adaptable only to supply and administrative functions. As a result, a considerable pool of such graduate officers had accumulated and, on 21 November, The Adjutant General advised the candidate examining board that "Signal Corps requirements for administrative officers have been fully met and no Candidates qualified for administrative duties only should be selected for the Signal Corps Officer Candidate School."

It had been decided to allow ROTC students to enroll in the Officer Candidate School to complete their training prior to being commissioned. This was necessary due to curtailment of training camp activities by the War and on 19 November one such candidate was included in Class 16. Not until Class 19, on 11 January 1943, when 25 ROTC men entered, did the next reserves enroll. When Class 30 entered in September 1943 they numbered almost 50% of the total, or 70 out of 151 enrollees.

As the calendar year 1942 concluded, 13 classes had entered the School. Of the 12,027 students, 9554, or 79%, had graduated. The enrollment as of 31 December was 4500 candidates. Class 20 was the last of those with a strength of 1000 enrollees. The next group was cut to 500 and Class 25 went down to 334. With that group the interval between the classes was extended again to one month.

The second anniversary of the Officer Candidate School in June 1943 showed a total of 21,754 enrolled and 15,198 graduated, or 70%. The capacity had been reduced to 1000 with classes of 333 entering at monthly intervals for three-month courses. Class 27, in June, was the last of the three-month periods. Early in June it had been announced that, effective 1 July, the course would be extended to four months, providing one-month of field work in addition to the academic instruction.

The quota for Class 28 was reduced to 150 and enrollees were selected only from ROTC, electronics training groups, or overseas veterans. Typically, Class 30, 18 September, had 35 overseas men, 19 of the electronics personnel, and 54 ROTC candidates.

Administrative staffs of the Officers' and Officer Candidate Schools were combined on 16 August 1943. Colonel Richon, as Assistant Commandant of the School, was in charge of both Departments.

Class 28 completed the first of the new four-month courses in October. Some curricular revision was made shortly thereafter. The

junior period was set at 49 days of instruction, the senior at 29 days of instruction, and 18 days were devoted to field exercises. A 25-hour command post exercise and six hours of marches, camps, and bivouacs were included in the problems.

Camp Misery, a subpost of Fort Dix, was established as a base for an 18-day field exercise in October 1943. Class 28 made the first trip to this area by motor convoy on 18 October.

The Adjutant General established the capacity of the Officer Candidate School at 150 in August. These were to enter at 17-week intervals, beginning 1 October. This quota allowed approximately 75 electronics and ROTC men and 12 overseas candidates per class, which made it extremely difficult for men on foreign service to be accepted.

Recognizing the inequity of the situation, expansion was authorized in January 1944 to accommodate troop unit and overseas candidates. A total of 1500 students was authorized for the first 17 weeks of the year 1944, beginning with a class of 250 in January.

Enrollment increased nearly 500% during the first quarter of the new year. It remained practically static throughout the second quarter, with some downward trend. There were 543 graduates during the first six months; 117 in Class 32 on 20 April; 144 in Class 33 on 2 May; and 282 in Class 34 on 21 June 1944.

Capacity was again increased, reaching 2000 early in June when the class quota was raised from 420 to 500 candidates. It was cut to 1200 in September and further reduction to less than 500 per class contemplated before December 1944. The 285 graduates of Class 37 raised the total of graduates from the Officer Candidate School during its more than three years of existence to 18,891. This figure, with Class 48, on 7 September 1945, would reach a grand total of 20,749 Second Lieutenants commissioned from the School during its wartime existence.

Enrollment decreased again in the last quarter of the year, dropping over 60%. From 1301 candidates on 1 October, it fell to 1034 on 1 November, 738 on 1 December, and 536 on 1 January 1945. Class totals dropped to 120 in November and December.

Colonel George L. Richon was relieved on 3 November 1944 and replaced by a Southwest Pacific veteran, Colonel Hugh Mitchell, who took command of the Officers' and Officer Candidate Schools.

The Chief Signal Officer, in November, informed the Commandant: "A review of current officer candidate training indicates that certain changes are necessary to achieve greater uniformity of mission, selection and instruction. The first step in the revision of the current course is to establish a 'basic training' phase which will become common to the course given in all ASF Officer Candidate Schools and probably will not be given under Signal Corps supervision. After training in basic subjects, the candidate will be selected and then trained for a particular branch. The proposed course length of this phase, for planning purposes, will be ten 44-hour weeks."

The Candidate School was instructed to prepare a course of instruction for a 10-hour Signal Communications course to include only

material considered most essential to a well informed officer, regardless of the branch to which he was, or might be, assigned. This was to be given to all candidates during basic training. The revised course was designed to provide an entirely new program of Signal Corps officer training for post-war use. Ten weeks of "Branch immaterial" training, including the short Signal Communications sub-course, would be given to all ASF candidates. This would be followed by 14 weeks of Signal Corps officer candidate training, at the end of which the successful students would be commissioned.

A study on candidate failures was made at this time. Of the approximately 25% who did not graduate, 11% were rejected because of academic deficiencies, 8% for lack of leadership, 2% because of lack of technical education or communications experience; and 4% for miscellaneous reasons, including lack of adaptability, summary dismissals, dismissals for physical reasons or conduct unbecoming an officer candidate.

Other interesting percentages showed that 88% of candidates who were Warrant Officers were commissioned. More than 75% of Master and First Sergeants were graduated; 79% of Technical Sergeants; 84% of Staff Sergeants; 67% of Sergeants; and 75% of Corporals.

Lt. Colonel William F. Starr was assigned to the Staff and Faculty of the Eastern Signal Corps School on 13 January 1945 and became Assistant Commandant and Director of the Officer Candidate School on 29 January relieving Colonel Mitchell.

As the War approached an end, plans were being considered to increase the officer candidate training cycle to a 6-month period. The huge war-time Army could not be demobilized immediately following victory and the need for commissioned officers would remain, even with the cessation of hostilities both in Europe and in the Pacific.

3. The Eastern Signal Corps Training Center

Signal Corps training had been converted to full wartime basis by the second quarter of 1942. The School was redesignated the Eastern Signal Corps School on 20 June, the Officer Candidate and Aircraft Warning Departments added to the organization. A constantly increasing enrollment taxed the already distended facilities of the post following the Declaration of War. Plans were formulated in July 1942 to remove the Aircraft Warning Department to a new site on Hobe Sound, in Florida. This installation was dedicated as Camp Murphy, honoring a Signal Corps officer who had performed experiments of lasting importance on radio beams. As the Aircraft Warning area on the post was cleared, the Enlisted Department of the School immediately occupied the buildings.

In June of 1942 the Replacement Center was in the process of moving to Camp Wood and the Officer Candidate School was expanding into the newly vacated area. The Officers' Department was faced with an acute housing shortage and a large proportion of its facilities was installed in the Asbury Park area in September. Several

resort hotels were leased for housing and the Convention Hall used for training purposes.

Training units had grown haphazardly at Fort Monmouth and it was determined to consolidate all such functions under one command. The Eastern Signal Corps Training Center was organized on 9 October 1942, Brigadier General George L. Van Deusen declared Commanding General. Authorization was by War Department Special Order No. 274.

General Order No. 2, Eastern Signal Corps Training Center, 30 October, listed the component units of the command: the Eastern Signal Corps School, including School Service Troops; the Signal Corps Replacement Training Center; and all Signal Corps units of the War Department Reserve station at Fort Monmouth. The order added:

"The Commander of the Training Center will be assisted by a staff whose duties will be:

- a. To keep the Commander advised of the state of training in all agencies under his control;
- b. To collect and disseminate information regarding tactical and training doctrine and experience applicable to Signal Corps training;
- c. To assist in making available to each training agency the personnel, equipment, and facilities needed for the efficient performance of its training mission; and
- d. To recommend changes in courses or methods of instruction to conform to current training doctrine and personnel requirements."

Administrative routine for the Training Center headquarters was initially performed by the post staff due to lack of a Table of Organization. Authorization for such a headquarters staff was not received until April 1943 but various officers of the School and Replacement Training Center were attached to the Eastern Signal Corps Training Center headquarters for staff duties.

The Staff of the Signal School at this time consisted of Colonel William O. Reeder, Commandant; Director, Department of Training Literature, Colonel Jay D. B. Lattin; Assistant Commandant, Officers' School, Colonel Thomas H. Maddocks; Assistant Commandant, Enlisted School, Colonel Merton G. Wallington; Assistant Commandant, Officer Candidate School, Colonel George L. Richon; Director, Department of Classification, Lt. Colonel James S. Williams.

The Signal Corps Replacement Training Center was commanded by Brigadier General Edgar L. Clewell; Executive Officer was Colonel Lester J. Myers. Lt. Colonels Philbrook and Walker were in charge of the two training regiments.

An ESCTC Memorandum, 13 November, announced the organization of the staff of the Commanding General along functional lines in four specifications: basic mobilization training, radio communication, wire communication, and motor transport. It was explained that "The chief of each staff section is charged with the inspection and coordination of all activities under his specialty in each of the three sub-

divisions of the Training Center; Schools, Replacement Training Center, and Training Center units."

It was directed that a close liaison be maintained between the various phases of training encompassed within the jurisdiction of the Training Center, and that coordination must be the watchword.

Mass graduation of officer candidates had created a processing and assignment problem that was solved by the creation of a Classification Department. More than 3000 officers and officer candidates were handled in January 1943. Requisitions were filled for more than 1300 commissioned personnel during the month.

The headquarters of Fort Monmouth had been separated from that of the Signal School before the redesignation of the latter, and Colonel James B. Haskell, Post Commander, was responsible directly to the Commanding General, Second Service Command. However, the post staff was serving primarily with the ESCTC. A general reorganization in post headquarters was effected by General Order No. 3, Fort Monmouth, 11 February 1943. Eight staff divisions were activated: Administration, Training, Personnel, Supply and Service, Surgeon, Engineer, Intelligence and Internal Security, Inspector General, and Public Relations.

Several Signal Corps units had been assigned to the Commanding General, ESCTC, for training. Included among these were various organizations being oriented for overseas service. The 822nd Signal Fixed Radio Station Company was activated at Fort Monmouth, served in a training capacity and, in 1943, was redesignated as Company "A" of the 848th Signal Service Battalion and attached to the Unit Training Center. Numerous VHF installation crews, radio intelligence teams, and service company sections were trained by this Company.

General Van Deusen requested authority to appoint a staff for the Eastern Signal Corps Training Center on 2 March 1943. This was granted and on 7 April one Colonel, one Lt. Colonel, two Majors, and one Captain were approved for such a function. A detachment of the Women's Army Auxiliary Corps was assigned to replace enlisted men in ESCTC headquarters. Colonel W. K. Dudley, recently returned from overseas, relieved Colonel Stutesman as Chief of Staff of ESCTC on 28 April 1943. The previous day Colonel Reeder, Commandant of the School, was promoted to Brigadier General. This made a total of three general officers at Fort Monmouth.

The Fort and its subposts, including all activities, was placed under the command of the Commanding General, Second Service Command, for two weeks in May 1943. New Service Unit designations were issued, but the new organizations were short lived and control reverted to the Chief Signal Officer.

The Department of Training Literature, integral section of the Signal School, had been growing steadily during the war mobilization period. In the summer of 1943 the officer personnel totaled 29. There were 19 completed training manual projects for the year; 80 manuals were in the course of preparation or revision; and miscellaneous activities were in progress with films, film strips, and training circulars. In addition, the Office of the Commandant of the School had

been producing training literature at an average of 6,000,000 mimeographed and 1,700,000 printed pages per month. The Records and Distribution Section of the Office of the Chief Signal Officer had been transferred to Fort Monmouth and was operating with the literature section in the office of the School Commandant.

In accordance with War Department policy, a survey of enlisted opinion was conducted by the Commanding General in July 1943. This indicated among other things, that 72.4% of the personnel had a high school education; 70.6% liked the type of duty to which they were assigned; 85% got enough to eat; 80% said the food was well prepared, and 89% thought it was served properly.

As of October 1943 the major components assigned to ESCTC were: the Eastern Signal Corps School, including the Officers' School, Officer Candidate School, Enlisted School, and the 15th and 803rd Signal Training Regiments, the Department of Training Literature, and the Classification Department; the Eastern Signal Corps Replacement Training Center, which included the 1st and 2nd Signal Training Regiments; and the Eastern Signal Corps Unit Training Center, comprising units attached to the Commanding General for training purposes.

The Eastern Signal Corps Unit Training Center was activated 10 August 1943 and by October had more than 4400 officers and men assigned and attached. Fifteen units were attached for training, ranging from separate companies to regiments. The Unit Training Center was divided into a headquarters detachment and the 1st and 2nd Training Regiments. Colonel Carroll O. Bickelhaupt was Commanding Officer, Colonel Lester J. Myers the Executive Officer. Colonel Boyd B. Hill commanded the 1st Regiment and Colonel James R. Philbrook the 2nd.

Of the functional divisions of the Unit Training Center the most important was the Training Division. This section directed, supervised, and coordinated the training of attached organizations, units, cellular teams and individuals. Directed by Colonel Albert F. Hogle, its functions included the planning, preparation, and issuance of training directives and orders; planning and supervision of exercises, problems and tests; planning for movement of organizations and teams for tactical training; the approval of training and instructional schedules; supervision of the troop schools; and the preparation and distribution of training aids and literature.

The first organization reached Fort Monmouth and the Unit Training Center on 15 August 1943, from Camp San Luis Obispo, California, and there was a constant influx thereafter. Parent organizational functions at the Center were performed by the 848th Signal Training Battalion, which had been transferred, without personnel, from Camp Crowder, Missouri. On 28 October 1943 the Unit Training Center had 4431 officers and men, assigned and attached; it included 2623 in the 1st Signal Training Regiment and attached units at Camp Edison, 1705 in the 2nd Signal Training Regiment, and 103 officers assigned to ESCUTC headquarters at Camp Wood.

All officers at Fort Monmouth, both student and staff, were required to cover an infiltration course at the Allaire Combat Training

Area beginning October 1943. The course involved 85 yards of crawling under machine gun fire, through terrain heavily intersected with barbed wire. Small land mines and fire crackers were exploded to simulate battle conditions.

The 15th Signal Training Regiment, genealogically the oldest unit at Fort Monmouth, was commanded by Colonel Frank H. Curtis, longtime veteran of the post. On 15 October the organization had four battalions operating at Monmouth and an Asbury Park Detachment, which serviced the Asbury Park Area Officers' School installations. Inactivation of several companies within the regiment was effected in November and a similar consolidation was taking place in the 803rd Signal Training Regiment, which lost ten companies in November and December 1943.

Three observation airplanes of the 127th Liaison Squadron, based at Morris Field, North Carolina, were attached to ESCTC for 3½ months of temporary duty in December. Flying from Red Bank airport, these aircraft were used in testing camouflage efficiency, demonstrating aerial message pickup, air-ground panel communications, and the aerial photographing of Fort Monmouth installations. It was a great change from the "Jennies" of 1918.

Twenty-six officers of the Women's Army Corps were enrolled in the message center course of the School in December 1943, the first women ever to be trained at the post. A group of ten United States Navy communications officers entered the School in October. Their numbers were to increase rapidly. During subsequent months officers of the Allied nations were sent to Fort Monmouth for technical training and they became a common sight on the post.

With the complete inactivation of the 1st and 2nd Signal Training Battalions at the Unit Training Center, the 848th Signal Training Battalion assumed the full functions of those organizations. Colonel James R. Philbrook remained as Commandant of Camp Wood and Lt. Colonel Smith retained charge of Camp Edison. The remainder of the 848th Battalion was transferred from Camp Crowder on 1 January 1944.

At the beginning of 1944, four training companies of the 848th Signal Training Battalion were located at Camp Edison and acted as parent organization for the basic military training of new inductees. After completion of the six-week basic military training program at Camp Edison, the trainee was transferred to Camp Wood for eight weeks of specialist training, administered by three additional companies of the 848th. After an interim period of as much as three weeks of provisional team training, the trainee became part of a team or unit and underwent six weeks of team or unit training. The team or unit of which the trainee was a member would then undergo a period of advanced unit and refresher specialist training until the unit was called for overseas service. The first inductees to enter the new program arrived at Camp Edison from reception centers on 3 January 1944.

A unique innovation at the Allaire Field Training Area was the Mental Conditioning Chamber which was called the "Lunk Trainer," patterned after a similar device at Fort Benning, Georgia. A covered

dugout, unlighted and unventilated, served as a simulated command post for signal communications operations. The trainees performed their specialist functions with high-power fans directing wind, sand, and water into their faces, and smoke pots providing the smell of burnt gunpowder. Climactically, a horse cadaver, in an advanced state of decomposition, was used to approximate the odor of decaying human flesh. This latter feature was later removed upon the advice of medical authorities.

In January 1944 the authorized capacity of the Unit Training Center was 6007, identical with the last figures of the Replacement Training Center. Officers and men assigned to headquarters totaled 386. The 848th Battalion had 1252; 4524 were assigned to organizations attached for training.

By 2 September 1945, official V-J Day, the Unit Training Center had trained 79 teams, 56 detachments and platoons, 46 companies, and 26 battalions. Of these, 78 teams, 50 detachments and platoons, 39 companies, and 16 battalions had been activated in the UTC. In terms of individuals trained, the totals were impressive: 1605 officers and 23,982 enlisted men. Over 81 percent of the units were shipped overseas. Following are the figures.

Teams	69
Detachments and Platoons	40
Companies	34
Battalions	25

Six teams and two companies were permanently transferred within the continental United States. The Unit Training Center had produced all types of Signal Corps units as listed in T/O & E 11-500.

Paragraph 2, Army Service Forces Circular No. 127, 20 November 1943, activated the new Fort Monmouth Signal Corps Publications Agency. Tentatively the plans for this organization had been announced in an Office Memorandum of the Chief Signal Officer in September. A Publications Branch was to be instituted in the Personnel and Training Service at Washington. Further:

"A Fort Monmouth Signal Corps Publications Agency, responsible to the Personnel and Training Service, will be organized and operated at Fort Monmouth under the direction of the Commanding General, ESCTC. This Agency will be formed by transfer of the personnel allotments, equipment, furniture, files, and functions of the Department of Training Literature, ESCS; the Instruction Literature Section, Fort Monmouth Signal Laboratories; and the Technical Publications Section, Camp Evans Signal Laboratories."

Functions of the Publications Agency were delineated in an inclosure to the memorandum: "Review and approve, prior to publication, all Signal Corps publications, forms, films, and film strips, with certain specified exceptions; make studies and prepare plans for the improvement of all Signal Corps publications; determine the necessity for, and prepare manuals not covered by contract; prepare manu-

scripts for other publications according to directives from the Publications Branch; develop and initiate plans for the improvement and standardization of school publications used in the various schools and training centers; determine the need for literature based on change in tactical doctrine, change in training doctrine, changes in employment of older types of equipment, or formation of new types of units; and maintain records and file copies of all publications within the Signal Corps."

The Department of Training Literature, basic unit of the new Agency, had been organized at Fort Monmouth in 1921 as a section of the Signal School. It had functioned continuously since that date. On 15 October 1943 the personnel had included 31 officers, 23 enlisted men, and nine civilians. Lt. Colonel Fred M. Henshaw was the Acting Director at the time. The Literature section moved from the old Aircraft Warning Area in November and occupied a site in the southwest corner of the post. It was joined there during the following week by personnel from the other sections then being combined to form the Publications Agency. Brigadier General W. O. Reeder, Commandant of the School, was also made Director of the Agency, with Colonel Samuel S. Lamb as Deputy Director in Charge of Liaison. Colonel Henshaw was Deputy Director in Charge of Production. The organization was divided into four major sections: Literature, Review, Visual, and Services. By 15 January 1944 it had occupied 16 buildings in the new area, had 500 projects in preparation.

The headquarters staff of the Eastern Signal Corps Training Center on 1 April 1944 included Colonel Wolcott K. Dudley as General Van Deusen's Chief of Staff. Lt. Colonel Earle B. Williams was made commanding officer of the 848th Signal Training Battalion, and shortly thereafter, on 12 June 1944, General Van Deusen's promotion to Major General was approved by the Congress. Colonel Harry E. Storms, who had commanded the Western Signal Corps Training Center at Camp Kohler, California, replaced Brigadier General Reeder as School Commandant. Lt. Colonel Fred M. Henshaw became Acting Director of the Publications Agency.

The latter organization was revamped in May 1944. The Literature Division was dissolved and replaced by Radio, Radar, Wire & Miscellaneous, Review, and Visual Aids Sections. The Agency at this time instituted a new policy of sending detachments into the field to work with manufacturers of equipment at their factories. These men remained on extended temporary duty for as long as three months; results were excellent.

A seven-week course in the maintenance and operation of teletype equipment for Navy officers was started at the School on 5 June and enrollment has increased steadily since that date.

Former Italian prisoners of war, redesignated "signees," were brought to Fort Monmouth to perform housekeeping duties, in June. A Lt. Colonel and some 500 enlisted men became motor pool, hospital, mess, and repair shop attendants, relieving American soldiers of those duties.

Certain farmlands, near Eatontown, New Jersey, were made available by private landowners, rent free, and tillage was begun on

a volunteer basis by the enlisted men of the 15th Signal Training Regiment. The Engineer and Quartermaster of the post furnished equipment. Several tons of fresh vegetables were soon produced for the regular messes.

The Radar School began to return to Fort Monmouth in August 1944. Facilities at Camp Murphy, Florida, were abandoned and the installation completely closed in November.

The Publications Agency established a branch office at the Signal Corps Photographic Center, Astoria, Long Island, to handle the production and review of photographic literature. The Agency was engaged in constantly expanding operations. Multifarious equipment required the continuous preparation, revision, and printing of technical publications.

A tropical hurricane of violent proportions swept the entire Atlantic seaboard on 14 September 1944. Damage estimated at \$67,000 occurred at Fort Monmouth and subposts. The destruction was largely limited to fallen trees, telephone poles, and communications lines. A range building was blown down at Camp Edison and electric power was interrupted for some hours at Camp Wood.

Colonel Carroll O. Bickelhaupt was promoted to Brigadier General on 24 August but was relieved by Colonel Harry E. Storms, who had previously commanded the Signal School. Brigadier General Stephen H. Sherrill, one-time commanding officer of the 51st Signal Battalion and intimately associated with Fort Monmouth, was assigned as Commandant of the School. General Sherrill came to the post from Drew Field, Florida, where he had commanded the Army Air Force Aircraft Warning Unit Training Center.

Major General Van Deusen, accompanied by Major R. R. Little, left on 25 October 1944 for a two-month inspection of Signal Corps installations in the European and Mediterranean Theatres of Operations. In his absence, General Sherrill took command of the ESCTC. General Van Deusen returned in December but was transferred to Washington on 3 January 1945. General Sherrill then was appointed Commanding General, Eastern Signal Corps Training Center.

Colonel Hugh Mitchell took charge of the School, and Colonel James B. Haskell, post commander at Fort Monmouth since 1942, was relieved in November. Colonel Leon E. Ryder, Executive Officer for six months, became the new Commanding Officer of the Post.

With the decline in requirements for trained replacements within the Signal Corps, arrangements were completed to transfer most of the functions of the Enlisted Department of the Signal School to Camp Crowder, Missouri. Starting with a high of 6479 students on 1 July 1944, enrollment fell to 3853 on 30 September and to 1297 on 1 January 1945. With the exception of three classes, all enlisted students were sent to Missouri after 1 December 1944. Those retained at Fort Monmouth were Radio Repairman, Aircraft Equipment; Wire Repairman, VHF; and Radio Repairman, VHF. For these students the training schedule was reduced to 39 hours per week, on a single shift basis.

General Sherrill reorganized his headquarters staff on 3 January 1945. Five staff divisions were provided: Personnel, Training, Adju-

tant General, Judge Advocate General, and Inspector General. A Supply Division was formed on 23 January.

Camps Edison and Wood were placed on a temporary caretaker basis on 1 February, coincident with the movement of the Unit Training Center, which returned to Fort Monmouth. The 848th Signal Train-



BRIG. GEN. STEPHEN H. SHERRILL

Commanding General
Eastern Signal Corps Training Center
3 January 1945 to 23 December 1945.

ing Battalion also made the move. Colonel Harry E. Storms continued in command of the Unit Training Center.

The Eatontown Signal Laboratory was transferred from authority of the Chief Signal Officer to that of the Commanding General, Army Air Forces, on 1 February 1945. Renamed "Watson Laboratories," the installation honored the late Lt. Colonel Paul Watson, who had

directed the Camp Evans Signal Laboratory. The installation became part of the Air Forces Technical Service Command.

Dedicatory ceremonies were participated in by Major General Roger B. Colton, Director of Signal Activities of the Air Force Technical Service Command; Brigadier General Sherrill; Brigadier General F. O. Carroll, Chief of the Air Force Technical Service Command's Engineering Division; and by Colonel Oscar C. Maier, the commanding officer of the Watson Laboratories.

Major General Harry C. Ingles, Chief Signal Officer, presented the Legion of Merit to Brigadier General Sherrill, Commanding General of ESCTC, on 2 March 1945. This award was for outstanding services while commanding the Third Air Force's Aircraft Warning Unit Training Center at Drew Field, Florida. Major General William S. Rumbough, of the European Theater, was a distinguished guest at the ceremonies.

At war's end Fort Monmouth had begun to consolidate the many activities which had grown so tumultuously since the beginning of the war. Camp Edison was in a somnolent stage and Camp Wood almost abandoned, although later used again by the Unit Training Center. The Signal Laboratories had dispersed over a large part of Monmouth County and were in full operation on V-J Day. The School had been divided, with activities at Fort Monmouth largely restricted to officer training. The Officer Candidate School continued to function on a reduced basis.

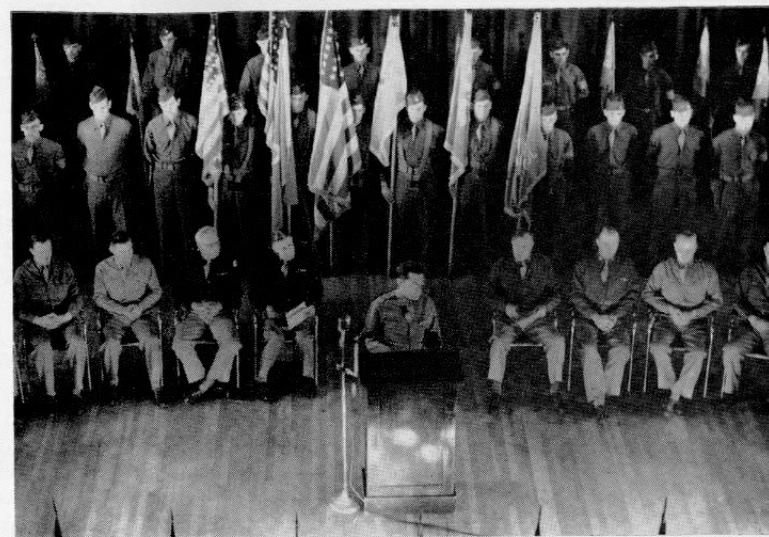
* * *

The end of the European war came on 8 May 1945. Fort Monmouth observed it quietly.

To mark the occasion a colorful retreat ceremony was held at War Department Theater No. 2. Representatives of the various units, schools, and headquarters crowded into the auditorium and the remainder of the Post heard the program over the public address system.

Seated on the stage, along the front edge of which stood the flags of all the United Nations, were Brig. Gen. Stephen H. Sherrill and his party: Col. Hugh Mitchell, Commanding Officer, Eastern Signal Corps Schools; Col. Harry E. Storms, Commanding Officer, Unit Training Center; Col. Frank H. Curtis, Commanding Officer, 15th Training Regiment; Col. Leon E. Ryder, Commanding Officer, Fort Monmouth; Lt. Col. J. S. Weeks, Post Executive Officer; Lt. Col. H. A. Buck, Chief of Staff, ESCTC; Lt. Col. J. J. Solomon, Education and Special Service Officer; Lt. Col. I. M. Clyne, Chief Medical Officer, Regional Hospital; Lt. Col. F. C. Frommhagen, Senior Post Chaplain; Capt. C. P. McLoughlin, Assistant Post Chaplain; Lt. C. A. Zwitman, Assistant Post Chaplain; and Capt. R. S. Scofield of the Officers' School.

Captain Frommhagen offered the invocation and the Fort Monmouth Men's Glee Club sang the "Battle Hymn of the Republic." Speakers included Col. L. E. Ryder, who read a message from Major Gen. C. A. Terry, Commanding General, Second Service Command; Capt. R. F. Scofield, who stressed the importance of the battles yet to come in the Pacific; Lt. Col. H. A. Buck, who read General Sherrill's



V E Day Ceremony.



V-E Day Ceremony.

Order of the Day; and General Sherrill. It was General Sherrill's Order of the Day which sounded the keynote not only for the occasion but for the months to come: "In the 42d month of our war against the German government, American troops . . . have forced our enemies in Europe to accept unconditional surrender. Our fighting men have achieved the impossible . . . many of you now in this command were there . . . we are proud. . . Now it becomes our duty to turn our immediate attention to our cruel enemies in the Pacific. . . There can be no relaxation in our efforts. . ."

* * *

Fort Monmouth began its work of redeployment training with little loss of time. During the week of 8 July detachments of the first redeployment units—battle-scarred Signal Corps veterans of Africa, Italy, France, and Germany—arrived to be retrained for fighting in the Pacific. From 8 July 1945 to 1 October 1945, the overall strength of the Unit Training Center increased from 4,218 to 9,196.

In order to properly receive and assemble redeployed units, a Redeployment Branch was set up as a separate function of the Unit Training Center. The branch began operation on 1 July 1945 with three officers and 35 enlisted men, under the supervision of Captain M. H. Mason. The four sections of Redeployment Branch—Administration, Supply, Processing, and Records Survey—maintained all administrative functions for the redeployed units while assembling, designated and supplied each area for occupancy, processed all redeployed troops, and handled records and payrolls for units until qualified personnel from the units arrived.

During the months July, August, and September, 17 areas, including 159 buildings, were prepared for redeployed units. The Redeployment Branch prepared for 23 organizations having a T/O strength of 346 officers, 10 warrant officers, 6528 enlisted men. Actually, only about 30 percent arrived, because personnel eligible for discharge were separated by reception stations, and recuperation leaves and furloughs were extended 15 days.

Training programs for the members of the 22 organizations which arrived, were prepared in accordance with the training directive from the Office of the Chief Signal Officer, SPSMT-4, subject: "Training Directive for Redeployment Training," dated 7 June 1945.

The redeployment training program had been carefully worked out. It covered a period of eight weeks and concerned itself with briefing the men about their new enemy "the Jap," about health and sanitation methods necessary for life in the Pacific Theater, and about the care of Signal Corps Equipment in tropic and jungle areas. A large part of the training program was devoted to orienting the men to the job still required of them and the reasons why they must do it.

Then came the big news.

On 17 August 1945, military personnel from all over the Post gathered in the Open Air Theater to observe the end of the war against Japan. The program opened with the band playing a medley of songs. Then the audience sang "God Bless America," led by Ser-



V-E Day Ceremony.



V-J Day Ceremonies at the Open Air Theater.

Col. Ora Roberts is speaking and behind him are officers of many of the United Nations. Left to right: Lt. Col. J. J. Solomon, Special and Morale Services Officer; Lt. Col. Frederick C. Fromm, Senior Chaplain; (Col. Leon E. Ryder, Post Commander, and Col. Hugh Mitchell, both behind speaker, not visible); Col. Ora Roberts; Maj. General L. B. Nicholls, British Army; Brig. General Stephen H. Sherrill, Commanding General, ESCC; Col. H. J. Houghland, Air Corps Liaison Officer; Col. Harry E. Storms, C. O. ESCC; Col. D. G. McBride, AGF Liaison Officer; Capt. J. E. Williams, U.S.N.; Lt. Col. George S. Simmons, Chief of Staff; Major G. Graf, Red Army; Capt. Mary Fetscher, WAC, and Capt. C. V. E. DeJean, French Army.

geant Clark. The bugle sounded Attention. And as the band rendered "General's March," General Stephen H. Sherrill, Commanding General of the ESCTC, entered, followed by his party. The color guard advanced from rear to front and took up position in front of the stage. The audience stood with bowed heads as Chaplain F. C. Frommhagen, Post Chaplain, intoned the invocation, which was a universal prayer for men of all faiths. The band and Glee Club rendered "America the Beautiful."

Col. L. E. Ryder, Post Commander, addressed the thousands of servicemen and women seated in the amphitheater before him. "At long last," he began, "THE DAY is here!" Yet, he pointed out, "when the celebration is over, we must remember our obligations. . . . Every one of us in the armed forces—highly placed officer and private alike—has the solemn duty to carry on. None of us must relax our efforts at this time."

Lt. Col. Ora F. Roberts, Acting Executive Officer, next spoke and related some of his experiences in the Pacific. Colonel Roberts was "there" when the shooting was going on and gave his listeners some first-hand information of the war against the Japs.

Lt. Col. G. M. Simmons, Chief of Staff, then read General Sherrill's Order of the Day.

After being introduced by Colonel Ryder, Brig. Gen. Stephen H. Sherrill, Commanding General of the ESCTC, delivered a V-J Day address. The General pointed out that there are still problems to be met. "Your duty to country," he said, "does not end today; will not end when you discard the uniform that all the world now knows as a symbol of sympathy and understanding of our fellowmen best described by the four Freedoms that we want for all the world. You must help to bind up the nations' wounds and help care for those who made great sacrifices, and their widows and orphans."

The colorful ceremony ended after the Chaplain's benediction.

* * *

Now Fort Monmouth entered upon a new phase devoted to the solution of peace-time problems. First on the agenda was the establishment of a Separation Center from which men who had fought the battle well could return to take up their civilian duties.

With the end of the war, a \$400,000 construction program was initiated to house the new center, which sped Army discharges in the New York, New Jersey, and Delaware area. Upon completion, the Center separated over a thousand men from the Army every day until 31 January 1946.

Meanwhile, as a temporary expedient, a Separation Point was set up to discharge 100 or more men each day. The Point, functioning until the Center was ready, processed eligible enlisted personnel assigned or attached—unassigned to this command—who desired discharge for points or age. The first six men to be discharged passed through the Separation Point on 21 September 1945.

As Fort Monmouth geared itself for 1946, the first year of peace-time training, a new commanding general was assigned to the Eastern

Signal Corps Training Center. He was Brigadier General Jerry V. Matejka, who began his third tour of duty at Fort Monmouth on 28 December 1945 after 34 months of overseas duty in the British Isles, North Africa, the Philippines and Japan. His assumption of command highlights the principle that post-war communications training at Fort Monmouth will be based directly on the wartime experiences of the Signal Corps all over the globe.

* * *

The history is not complete. It never will be. Now a veteran of two wars, Fort Monmouth has progressed from the tents of Camp Little Silver to become one of the most intense of concentrations of technical signal installations in the world. From a war-time crescendo, reconversion must be made to the ways of peace. Fort Monmouth faces into the halcyon days.

Appendix A

STREETS AND POINTS OF INTEREST
OF FORT MONMOUTH

Appendix A

STREETS AND POINTS OF INTEREST OF FORT MONMOUTH

TINDALL AVENUE

The thoroughfare known as Tindall Avenue was so designated in memory of the late Major Richard Gentry Tindall, Jr. Tindall Avenue joins Todd Avenue to Stephenson Avenue.

RICHARD GENTRY TINDALL

Major Tindall was born in St. Louis, Missouri, 14 October 1918. He was appointed a cadet of the United States Military Academy 1 July 1937. He was graduated from the United States Military Academy on 11 June 1941, and was appointed a Second Lieutenant of the Signal Corps, United States Army. After a period of duty at Harvard University and Massachusetts Institute of Technology he was assigned to the Staff and Faculty of the Southern Signal Corps School, Camp Murphy, Florida, on 6 June 1942. At the Southern Signal Corps School, Major Tindall served with distinction as the Officer in Charge of the Airborne Radar Division. He was assigned as Division Signal Officer of the 92d Infantry Division on 19 June 1944. Major Tindall was killed in action in Italy, 6 March 1945, while serving with the same organization.

FRASER STREET

The gravel drive just east of and parallel to Oceanport Avenue extending from Allen Avenue to Leonard Avenue is known as Fraser Street in honor of Second Lieutenant N. W. Fraser, Signal Corps, killed in action during the present war.

MALTERER AVENUE

The avenue bounding Van Kirk Park on the east is known as Malterer Avenue in memory of Captain John A. Malterer, Signal Corps.

JOHN A. MALTERER

Captain Malterer was the Officer in Charge, Radio Division, Signal Corps School, at the time of his death in 1927. He was an expert in the field of radio communication and assisted greatly in the development of radio procedure and practice in the United States Signal Corps. Fort Monmouth Headquarters, General Orders No. 11, 13 April, 1943.

TELEGRAPH AVENUE, RADIO AVENUE, MESSENGER AVENUE, AND PIGEON AVENUE were named for means of Signal Communication.

BARKER CIRCLE

The circular drive located within the quadrangle formed by buildings 287, 207, 208, 206, 282, and 205, is known as Barker Circle in honor of Cadet Ernest S. Barker, Jr., United States Military Academy, killed in an airplane accident at West Point, New York, during a training flight.

JAGGER PARK

Honoring Lt. H. R. Jagger, 304th Field Signal Battalion, 79th Division, killed in action near Montfaucon, France, October 1918, while supervising work of detail laying wire across a field swept by machine gun fire.

GARDNER HALL

The Fort Monmouth Bachelor Officers' Quarters (Building 271) is designated Gardner Hall in memory of the late Brigadier General John Henry Gardner, United States Army.

JOHN HENRY GARDNER

General Gardner was commissioned a Second Lieutenant of Field Artillery, Regular Army, in 1917 and served with the 3rd Division in France. He graduated from the Signal School at Camp Alfred Vail (now Fort Monmouth) in 1923, and was transferred then to the Signal Corps. He continued to serve in the Signal Corps at various stations including a period as Executive Officer of the Signal Corps Laboratories at Fort Monmouth from 1930 to 1934. In 1939 he went to Wright Field, Ohio, where he became Director of the Aircraft Radio Laboratory. He was promoted to Brigadier General in April 1943 and later was transferred to the Aircraft Signal Service as Director. In both of these assignments he supervised the development and procurement of new devices for instrument flying and landing. For these services he was awarded the Legion of Merit. In August 1943 he was transferred to the Office of the Chief Signal Officer in Washington as Assistant Chief, Procurement and Distribution Service. He died suddenly of a heart attack at Walter Reed General Hospital in Washington on 11 October 1944.

General Orders No. 19, Headquarters, Eastern Signal Corps Training Center, 5 June 1945.

RUSSEL HALL AND RUSSEL AVENUE

The first avenue running parallel to and north of North Parade is known as Russel Avenue.

The administrative building 286 which faces on Greely Avenue is known as Russel Hall.

Russel Avenue and Russel Hall are so named in honor of Major General Edgar Russel.

EDGAR RUSSEL

Major General Russel was born in Missouri, 20 February 1862. He graduated from West Point in 1887.

In 1917, he sailed for France with General Pershing as Chief Signal Officer, AEF, in charge of military telephone, telegraph cable, and radio systems. He was promoted to Brigadier General 5 August 1917.

Returned to grade of Colonel 15 August 1919, he was assigned to Governor's Island, New York, as Signal Officer, Eastern Department and Second Corps Area.

On 11 October 1921, he was promoted to Brigadier General at Camp Knox, Kentucky.

On 2 December 1922, he was promoted to Major General and three days later retired for disability incident to the service.

He was awarded two Silver Stars and cited for gallantry in action in Yangtsun, China, 6 August 1900, during the operations of the China Relief Expedition against the Boxers and for gallantry in action at Peking, China, 15 August 1900, during the Operations of the China Relief Expedition against the Boxers.

SQUIER LABORATORY

Large red brick building housing part of the Signal Corps Engineer Laboratories is known as Squier Laboratory in honor of Major General George O. Squier.

GEORGE O. SQUIER

George O. Squier was born in Michigan in 1865.

He graduated from West Point in 1887 and served as a Lieutenant of Artillery (with details as acting signal officer) until 1899 when he was permanently commissioned in the Signal Corps. He received the Doctor of Philosophy degree from Johns

Hopkins University in 1903 and attained prominence in the scientific world for his discoveries and inventions in the field of electrical communications.

On 14 February 1917, Brigadier General Squier was appointed Chief Signal Officer. On 6 October 1917 he was promoted to Major General.

He was retired at his own request after 40 years' service on 31 December 1923. His high scientific attainments and notable contributions to the science of electrical communications as well as his distinguished services as Chief of the Signal Corps during the World War had made him an outstanding figure in the life of the nation. He died in Walter Reed General Hospital, Washington, D. C., on 24 March 1934.

VAN KIRK PARK

The wooded park south of the Service Club and north of Saltzman Avenue, lying between Brewer Avenue and West Parade, is hereby designated Van Kirk Park in honor of Second Lieutenant John S. Van Kirk who was killed in action in North Africa on 30 November 1942 while serving with the First Armored Signal Company, First Armored Division. Lieutenant Van Kirk was inducted into the Army on 3 February 1941, was trained in Eastern Signal Corps Replacement Training Center and graduated from the Signal Corps Officer Candidate School 9 January 1942. Headquarters, Fort Monmouth, General Orders No. 24, 21 June 1943.

SALTZMAN AVENUE

The avenue which bounds the Parade Grounds on the south and extends to the West Gate is known as Saltzman Avenue in honor of Major General Charles McKinley Saltzman.

CHARLES MCKINLEY SALTZMAN

Major General Saltzman was born in Iowa 18 October 1871. He graduated from the United States Military Academy in 1896 and had served 23 years in the Signal Corps before becoming its Chief in 1924.

In the spring of 1918, he was assigned to the division of military aeronautics, returning to duty with the Signal Corps proper when the Air Service was separated therefrom. For his services in successfully accomplishing the difficult task, in the face of many obstacles, of preparing an organization for the procurement and supply of Signal Corps equipment for the Army, Major General Saltzman was awarded the Distinguished Service Medal. He was retired, on his own application, 8 January 1928, upon completion of four years' tour as Chief Signal Officer.

MYER AVENUE

Avenue which joins Allen, Carty, and Russel Avenues is known as Myer Avenue in honor of Brigadier General Albert J. Myer.

ALBERT J. MYER (1827-1880)

Brigadier General

Chief Signal Officer of the Army 1860-63, 1866-1880

Albert J. Myer was born at Newburgh, New York, 20 September 1827. After an apprenticeship as a telegraph operator, he entered Hobart College, Geneva, New York, from which he graduated in 1847. From early youth he had exhibited a predilection for artistic and scientific studies and upon leaving Hobart he entered Buffalo Medical College from which, four years later, he received the degree M.D. His graduation thesis "A Sign Language for Deaf Mutes" contained the germ of his visual signaling system.

While serving as assistant surgeon in the Regular Army in 1856, he drafted a memorandum on a new system of signals. It later became known as the "Wig-wag" system.

In 1860, Assistant Surgeon Albert J. Myer became the first Signal Officer with the rank of Major. Brevet Lieutenant Colonel, 27 May 1862 for gallant and meritorious service in the battle of Hanover C. H., Va. Brevet Colonel 2 July 1862 for gallant and meritorious service in the Battle of Malvern Hill, Va. Colonel Chief Signal Officer, 3

March 1863. Appointment of Colonel Chief Signal Officer expired by constitutional limitation 4 July 1864 and revoked 21 July 1864. Brevet Brigadier General 13 March 1865 for distinguished service in organizing, instructing, and commanding the Signal Corps of the Army, and for its special service on 5 October 1864, the day on which the post and garrison in Allatona, Ga., and a most valuable depository of provisions there, was attacked by the Rebel Army and saved by troops brought up by signals just in time to defend it, the messages being sent over the heads of the enemy and when communication in any other way was impossible. Colonel Chief Signal Officer 26 July 1866. Brigadier General Chief Signal Officer 16 June 1880.

To the indomitable courage, persistence, and genius of Albert J. Myer, the father of the Signal Corps, is due the greater part of the credit for the excellent services rendered by the Signals "to the Union cause."

Brigadier General Myer died at Buffalo, New York, 24 August 1880, at the age of 52.

LOCKWOOD AVENUE

The avenue between the Bachelor Officer Quarters of wood construction, commonly known as "Splinterville," is named Lockwood Avenue in honor of Lieutenant James Booth Lockwood.

JAMES BOOTH LOCKWOOD

American soldier and arctic explorer. Born Annapolis, Maryland, 9 October 1852; died Cape Sabin, 9 April 1884. He entered the Army as a Second Lieutenant in 1873 and served until 1880 in the West. He volunteered to accompany the Lady Franklin Bay expedition to the Arctic regions in 1881 and was made second in command to General A. W. Greely. His fame rests on the discovery of Lockwood Island in 1882, in lat. 83° 25' N, the farthest northern point of land or sea up to that time. He was one of the victims in the Cape Sabin tragedy in the winter of 1883-84. His body was brought to the United States and interred in the grounds of the Naval Academy.

HAZEN DRIVE

The drive connecting Frazer Avenue, Selfridge Avenue, and Burns Avenue is known as Hazen Drive in honor of Major General William Babcock Hazen.

WILLIAM BABCOCK HAZEN

He was born in West Hartford, Vermont, 27 September 1830.

He was graduated from West Point in 1855. On 16 May 1859 he was promoted to 1st Lieutenant because of his gallant conduct in two engagements with the Indians in Texas.

At the outbreak of the Civil War he was Assistant Professor of War Tactics at West Point. His promotions are as follows:

Major, 20 September 1863—For gallant and meritorious service in the battle of Chancellorsville, Va.

Lt. Colonel, 24 November 1863—For gallant and meritorious service in the battle of Chattanooga, Tenn.

Colonel, 1 September 1864—For gallant and meritorious service in the capture of Atlanta, Ga.

He was made a Major General of Volunteers in 1864.

In 1866 he became Colonel of the Infantry in the Regular Army.

He was appointed Chief Signal Officer in 1880, with the rank of Brigadier General. He employed scientists as observers, and he introduced "cold wave" signals and suggested the standard time meridian at present in use.

He died 16 January 1887 at Washington, D. C.

GREELY AVENUE

The street on which Russel Hall faces is known as Greely Avenue in honor of Major General Adolphus Washington Greely.

ADOLPHUS WASHINGTON GREELY

American arctic explorer. Born in Newburyport, Mass., 27 March 1844, enlisted as a private in the 19th Mass. Volunteers Infantry, serving in the Civil War, 1861 to

1865, during which time he was promoted to Corporal, then 1st Sergeant. He entered the Regular Army in 1867 as a Second Lieutenant and was appointed to the Signal Service. He was commissioned 1st Lieutenant 27 May 1873.

In 1881 he was put in command of an arctic expedition organized to carry out the plan of establishing circumpolar stations in accordance with the recommendations of the International Geographical Congress held at Hamburg in 1879. He was at Discovery Harbor, Grinnell Land, for two years. For his services to the geographical science he was awarded the Founder's Medal of the Royal Geographical Society and the Roquette Medal by the Societe de Geographie of Paris. He was promoted to Captain in the U. S. Army in 1887, became Chief Signal Officer with the rank of Brig. General, the first enlisted man and volunteer to reach that grade in the Regular Army. Under his command the telegraphic systems, lines, cables, and wireless of Puerto Rico, Cuba, Philippine Islands, and Alaska were developed and extended. In 1906 he was promoted Major General, when he ended the Ute campaign without bloodshed, and during the same year conducted relief of 400,000 earthquake sufferers in San Francisco without the occurrence of a single death.

He many times represented the U. S. abroad, the last time as military ambassador to the coronation of George V. He retired 27 March 1908.

On 27 March 1935, his 91st birthday, he was awarded the Congressional Medal of Honor for "splendid public service." He wrote many books after 1881. He died 20 October 1935, in Washington, D. C.

ALEXANDER AVENUE

The avenue which runs parallel and just south of the Central Railroad of New Jersey tracks is known as Alexander Avenue in honor of Lieutenant Edward Porter Alexander.

EDWARD PORTER ALEXANDER

He was an American engineer, born in Washington, Ga., 26 May 1835; died in Savannah, Ga., 28 April 1910. Graduating from West Point in 1857, he was made a Second Lieutenant in the Engineer Corps but became one of General Myer's assistants in demonstrating his mode of signaling and course to be pursued in introducing to the Army this mode of signaling. For three months they experimented with flags, torches, and glasses between Fort Hamilton, New York, and Sandy Hook, New Jersey, and in January, 1860, reported to the War Department what has since been known as the "Wig-wag System."

He resigned 1861 and entered the Confederate Army, served there until the surrender at Appomattox, April 1865, at first as Chief of Ordnance and Chief Signal Officer in the Army of Northern Virginia; then as Brigadier General and Chief of Artillery in Longstreet's Corps, taking part in the Wilderness and Spottsylvania and the siege of Petersburg. From 1866-1870 he was professor of mathematics and engineering in the University of South Carolina, then manager and president of some of the foremost southern railroads from 1871 to 1892. He was a government director of the Union Pacific Railroad, 1885-87, a member of the boards on navigation of the Columbia River and the Chesapeake-Delaware Ship Canal (1892-94) and in 1891 engineer arbitrator of the boundary survey between Nicaragua and Costa Rica.

ALLEN AVENUE

The avenue which the Commanding General's residence and Building 209 of the hospital faces is known as Allen Avenue in honor of Brigadier General James Allen.

JAMES ALLEN

Brigadier General James Allen was born in Laporte, Indiana, on 13 February 1849, and graduated from the United States Military Academy in 1872.

After serving with the Third Cavalry from 1872 to 1888, during which period he rose from Second Lieutenant to Captain, he entered the Signal Corps in which he rose to the rank of Brigadier General and Chief Signal Officer in 1906.

In 1925, Brigadier General Allen was decorated with the Distinguished Service Cross for raising and cutting, under the fire of Spanish batteries, two submarine cables

used by the Spaniards in Santiago Harbor, Cuba, in 1898. He also received a letter of commendation from President McKinley for his outstanding service in the Spanish-American War.

Upon his retirement in 1913, Brigadier General Allen concluded 41 years of distinguished active service in the United States, Cuba, Puerto Rico, the Philippines, and Alaska, which began with the Indian campaigns in the West and ended with the founding of the American Air Service.

GOSSELIN AVENUE

The street between the two rows of NCO quarters is known as Gosselin Avenue in honor of First Sergeant Alexander Gosselin.

ALEXANDER GOSSELIN

First Sergeant, Company B, 2nd Field Signal Battalion, awarded the Distinguished Service Cross for service in the Meuse-Argonne Offensive, awarded 4 December 1918.

On 1 January 1920 received citation for gallantry in action and especially meritorious services.

CARTY AVENUE

The street on which buildings 266, 267, 268, and 269 face is known as Carty Avenue in honor of Brigadier General John J. Carty.

JOHN J. CARTY

John J. Carty was first commissioned in the Signal Reserve Corps in 1916. He entered active service as Major in 1917 and rose to Colonel during World War I. After the war he was appointed Brigadier General, Signal Reserve. During the war he served at GHQ as director of wire communication for the AEF. He was decorated by the Commander-in-Chief with the Distinguished Service Medal at Chaumont on 23 March 1918. After the Armistice he was detailed as signal officer in charge of communications for the American Commission to Promote Peace.

He was vice-president and retired chief engineer of the A. T. & T., retired from active service on July 1, 1930, after more than 50 years of service in the Bell system. Upon his retirement the directors of the A. T. & T. established in the National Academy of Science a gold medal and award in his honor and bearing his name. This was done in recognition of his outstanding achievements in the field of electrical communications and applying science to the benefit of mankind.

He died at the Johns Hopkins Hospital, Baltimore, Maryland, on 27 December 1932, and is buried in the Arlington National Cemetery.

BURNS AVENUE

The avenue which forms a junction with Tilly Avenue and Hazen Drive is known as Burns Avenue in memory of Sergeant Kenneth K. Burns.

KENNETH K. BURNS

Sergeant Kenneth K. Burns, Company C, 2d Field Signal Battalion, "with unusual coolness and bravery, went forward with the first wave, constructing and maintaining his lines of communications under heavy machine gun and shell fire and constantly encouraging his men until he was killed."

COCKAYNE AVENUE

An avenue which joins Todd Avenue and Stephenson is known as Cockayne Avenue in honor of Sergeant Albert H. Cockayne, Company E.

ALBERT H. COCKAYNE

Sergeant Albert H. Cockayne with one helper, went out to repair a line which was down between Cabuyao and Calambor, even though no escort was available. They were attacked and killed by insurgents in the Philippine Islands in 1900.

FISHER AVENUE

An avenue which intersects Frazee Avenue, Selfridge Avenue, and Burns Avenue.

BENJAMIN F. FISHER

Chief Signal Officer from 1864 to 1866.

HILDRETH AVENUE

The avenue on which Building T-122 and Building 205 face is known as Hildreth Avenue in honor of Corporal Hildreth, 4th Field Signal Battalion, 3rd Division.

HILDRETH

Corporal Hildreth, having been wounded at the battle of the Marne, returned to the battle immediately after receiving first aid treatment, and having killed three of the enemy was himself killed in a hand-to-hand conflict.

LANE AVENUE

The avenue on which Buildings T-800 to T-809 face is known as Lane Avenue in honor of Private Morgan D. Lane, Signal Corps.

MORGAN D. LANE

Private Lane was awarded Medal of Honor for capture of flag of the Gunboat Nansemond at Jeterville, Virginia, 6 April 1865.

He was born in Monroe, New York.

NICODEMUS AVENUE

An avenue which forms a junction with Wilson Avenue and Radio Avenue is known as Nicodemus Avenue in honor of Lieutenant Colonel William J. L. Nicodemus, Signal Corps.

WILLIAM J. L. NICODEMUS

In 1863, he became Acting Chief Signal Officer; was relieved in 1864.

STEPHENSON AVENUE

The avenue upon which Buildings T-862 and T-824 face is known as Stephenson Avenue in honor of Sergeant 1st Class Claud Stephenson.

CLAUD STEPHENSON

Sergeant 1st Class Claud Stephenson, Company C, 2d Field Signal Battalion, "with unusual coolness and bravery went forward with the first wave, constructing and maintaining his lines of communications under heavy machine gun and shell fire and constantly encouraging his men until he was killed."

NORTH DRIVE

The drive beginning at Wilson Avenue and ending near the West Gate is known as North Drive in honor of Sergeant Ludlow F. North, Company E, Signal Corps.

LUDLOW F. NORTH

Sergeant North was attacked from ambush and killed while repairing lines cut by insurgent forces in the Philippine Islands, 1900.

TILLY AVENUE

An avenue which connects Burns Avenue, Evons Avenue, Selfridge Avenue, and Classner Avenue, is known as Tilly Avenue in honor of Captain George H. Tilly, Signal Corps.

GEORGE H. TILLY

Captain Tilly was killed in action in the Vasayas, 27 May 1899.

TODD AVENUE

The avenue which connects Cockayne, Telephone, and Alexander Avenues is known as Todd Avenue in honor of 1st Class Sergeant Robert J. Todd.

ROBERT J. TODD

Killed while in charge of party repairing lines at Amuling, Luzon, Philippine Islands, by insurgent attack.

WILSON AVENUE

The avenue just west of the Open Air Theater, Building 689, is known as Wilson Avenue in honor of Corporal Wilson, Signal Corps.

WILSON

Corporal Wilson, on Bohol Island, Philippine Islands, in 1900, escorted by 20 men, was repairing cut line when set upon by 300 bolomen. Corporal Wilson killed four before going down with nine bolo wounds.

BREWER AVENUE

The avenue bounding Van Kirk Park on the west is known as Brewer Avenue in memory of Colonel John H. Brewer, Signal Corps.

JOHN H. BREWER

Born in Conn., 3 April 1900

Military History: Cadet at Military Academy 1 July 1920 to 12 June 1924, when he was graduated and promoted to Second Lieutenant, Signal Corps.

At New Haven, Connecticut, student officer, Yale University, 6 August 1924 to 17 June 1925, when he was graduated with the degree of Master of Science. At Fort Monmouth, New Jersey, to 14 August 1925. At Fort H. G. Wright, New York, assigned Signal Corps Sound Laboratory.

First Lieutenant, Signal Corps, 2 January 1929, 10 July 1929; en route to Canal Zone, 11 July to 19 July 1929; at Corozal, Canal Zone, assigned 10th Signal Company.

Colonel Brewer was killed in action during an airplane flight in New Guinea on or about 12 May 1943. Headquarters, Fort Monmouth, General Orders No. 24.

WALLINGTON AVENUE

The avenue presently known as East Parade is hereby redesignated Wallington Avenue in honor of the late Colonel Merton G. Wallington.

COLONEL MERTON G. WALLINGTON

Born in New Jersey, 14 May 1901. Cadet at Military Academy 1 July 1920, to 12 June 1924, when he was graduated and promoted in the Army to Second Lieutenant, Signal Corps.

At Fort Monmouth, New Jersey, with the 15th Signal Service Company, 12 September 1924, to 15 May 1925. Reserve Officers' Training Camp and Citizens' Military Training Camp to 15 September 1925; Motor Transport Officer to 31 May 1926; ROTC and CMTC to 10 September 1926; student officer, Company Officers' Course, Signal School, 10 September 1926, to 15 June 1927, when he was graduated; ROTC and CMTC to 4 September 1927. Instructor in the Radio Division, Signal School, 4 September 1927, to CMTC.

First Lieutenant, Signal Corps, 15 August 1929, commanding 10th Signal Company, 3 March 1931.

Colonel Wallington, at the time of his death in 1943, was Assistant Commandant, Enlisted Men's School, Eastern Signal Corps Schools. He was responsible for the direction of the Enlisted Men's School during the period of its expansion. The large number of trained enlisted specialists graduated by the Enlisted Men's School in the past three

years is a fine tribute to the competency with which Colonel Wallington directed the operation of the Enlisted Men's School. Headquarters, Fort Monmouth, General Orders No. 11, 13 April 1943.

RASOR AVENUE

The street commencing at Main Street, Oceanport, and thence proceeding in a northwesterly direction, paralleling the railroad tracks of Oceanport siding (now known as Railroad Avenue) is known as Rasor Avenue in honor of Colonel Winchell I. Rasor, Signal Corps.

WADE STREET

The street parallel to Oceanport Avenue, immediately to the east of Hangars 101, 102, 103, 104, extending from Leonard Avenue to Riverside Avenue, is known as Wade Street in honor of First Lieutenant LaVern L. Wade, Signal Corps, killed in action during the present war.

MURPHY AVENUE

The road starting at the Fort Monmouth Post Office (Building 549), crossing Oceanport Creek, and running thence in a southwesterly direction, is known as Murphy Avenue in honor of Lieutenant Colonel William H. Murphy, Signal Corps, killed in action in the Western Pacific area during the present war.

SELFRIDGE AVENUE

The avenue which joins Allen Avenue and Leonard Avenue is known as Selfridge Avenue in honor of First Lieutenant Thomas E. Selfridge.

THOMAS E. SELFRIDGE

Lieutenant Selfridge was the first Army officer to be killed in an airplane accident. He was a Field Artillery officer attached to the Signal Corps when he lost his life at Fort Myer on 17 September 1908.

CAMP CHARLES W. WOOD

The military reservation embracing tracts known as the "Eatontown Area," the "Wire School Area," "Phillips Farm," "Monmouth Country Club," and "Field Laboratory Number 2 of the Signal Corps General Development Laboratory," is known as Camp Charles W. Wood in honor of the late Lieutenant Colonel Charles W. Wood, Signal Corps.

COLONEL RALPH LOWTHER AREA

The area encompassing the Fort Monmouth Army Mess and adjacent officers' quarters in the Eatontown Area on Tinton Falls Road has been designated the "Colonel Ralph Lowther Area."

RALPH LeMOINE LOWTHER

Lieutenant Colonel Ralph LeMoine Lowther was born on 8 March 1916, at Cardington, Ohio. After a year at Ohio State University, where he studied electrical engineering, he entered the United States Military Academy and was graduated 12 June 1939.

In April 1941, Lieutenant Lowther was assigned to the Staff and Faculty, the Signal Corps School, at Fort Monmouth, and served with distinction as an instructor there.

While serving as Division Signal Officer with the 75th Infantry Division, Lieutenant Colonel Lowther was killed in action in Belgium on 14 January 1945, at the age of 28 years.

As a result of his untiring efforts and excellent work in connection with signal communications in the initial action of the 75th Division in the Bra-Grandmenil-Hotton

sector, in the Ardennes break-through, and later in the offensive through the Grand Bois in Belgium, he was awarded the Bronze Star Medal posthumously.

EVANS AVENUE

Evans Avenue is named in memory of Lieutenant Colonel Paul Wesley Evans. It joins Tilly Avenue and Leonard Avenue.

PAUL WESLEY EVANS

Colonel Evans was born in Delaware, Ohio, on 10 June 1889. He received the degree of B.S. from Ohio Wesleyan University in 1910; was an honor graduate, Command and General Staff School, 1924; received an M.S. degree from Yale University in 1926; graduated from the Army War College, Washington, D. C., in 1929, and was on the General Staff Corps eligible list.

He entered the Regular Army as a Second Lieutenant, Coast Artillery Corps, on 25 November 1912; was promoted to First Lieutenant on 1 July 1916; assigned to the Signal Corps on 9 November 1916; promoted to Captain on 15 May 1917; transferred to the Signal Corps on 1 July 1920; promoted to Major on 1 July 1920, and promoted to Lieutenant Colonel August, 1935.

During the World War he served in the grades of Captain, Major, and Lieutenant Colonel in the Signal Corps. On 1 August 1917, he sailed for France in command of Company A, Second Field Signal Battalion, First Division. He later became an instructor in radio and electricity at the First Corps School and Army Signal Schools, AEF, and commanded the 101st Field Signal Battalion, Twenty-sixth Division, from 24 June 1918, to 22 September 1918. He took part in the Champaigne-Marne, Aisne-Marne, and St. Mihiel operations, after which he was returned to the United States for a staff instruction course at the Army War College, Washington, D. C.

He was on duty at headquarters of the Panama Canal Department as Department Signal Officer when he died suddenly at Gorgas Hospital in the Canal Zone on 10 April 1936, at the age of 46 years, as a result of complications following malaria.

WEST LABORATORY PARKWAY

West Laboratory Parkway bounds the park in front of Squier Laboratory and is so named for this reason.

RIVER AVENUE

River Avenue derives its name geographically from Oceanport Creek, which it parallels.

NORTH PARADE

North Parade derives its name geographically from the Parade Grounds which it bounds on the north.

GLESSNER AVENUE

Glessner Avenue is named in memory of Major Hamilton H. T. Glessner. It joins Tilly Avenue and Leonard Avenue.

HAMILTON H. T. GLESSNER

Major Glessner was born in Philadelphia, Pennsylvania, 18 September 1880, where he was raised and educated. He entered the Army 9 September 1917, serving overseas for two years. He was a graduate of the Army Signal School, Fort Monmouth, and the Air Corps Tactical School.

He was in the Panama Canal Department as Department Signal Officer when he was taken ill and died at Gorgas Hospital 15 January 1937.

CAMP BARTON

The camp located in wooded area on both sides of New Jersey State Highway No. 35, 2½ miles south of Eatontown, is known as Camp Barton in memory of Lt. Colonel David B. Barton.

DAVID B. BARTON

Lt. Colonel Barton was born 24 September 1901, in Pennsylvania. He was graduated from United States Military Academy 12 June 1923, and from the Company Officers' Course at Fort Monmouth in 1927. In 1937 he was Commanding Officer, First Signal Company. In 1941 he was Commanding Officer of the 60th Signal Battalion at Fort Lewis, Washington. In 1943 he was Assistant Director of Department of Training Literature at Fort Monmouth.

Lt. Colonel Barton was killed in action in Italy early in 1944.

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